

*for Bird*

# THE CONDOR

A Magazine of Western  
Ornithology



Volume XXIV

March-April, 1922

Number 2



COOPER ORNITHOLOGICAL CLUB

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A Magazine of Western Ornithology  
Published Bi-Monthly by the Cooper Ornithological Club

Entered as second-class matter January 25, 1922, at the post-office at Pasadena, California, under Act of Congress of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized January 5, 1921.  
Issued from the Office of THE CONDOR, 770 South Pasadena Avenue, Pasadena, California

## SUBSCRIPTION RATES

Two Dollars per Year in the United States, payable in advance.

Forty Cents the single copy.

Two Dollars and Twenty-five Cents per Year in all other countries in the International Postal Union.

## COOPER CLUB DUES

Two Dollars per year for members residing in the United States.

Two Dollars and Twenty-five Cents in all other countries.

Manuscripts for publication should be sent to the Editor, J. GRINNELL, Museum of Vertebrate Zoology, University of California, Berkeley, California.

Claims for missing or imperfect numbers should be made of the Business Manager, as addressed below, within thirty days of date of issue.

Cooper Club Dues, Subscriptions to The Condor, and Exchanges, should be sent to the Business Manager.

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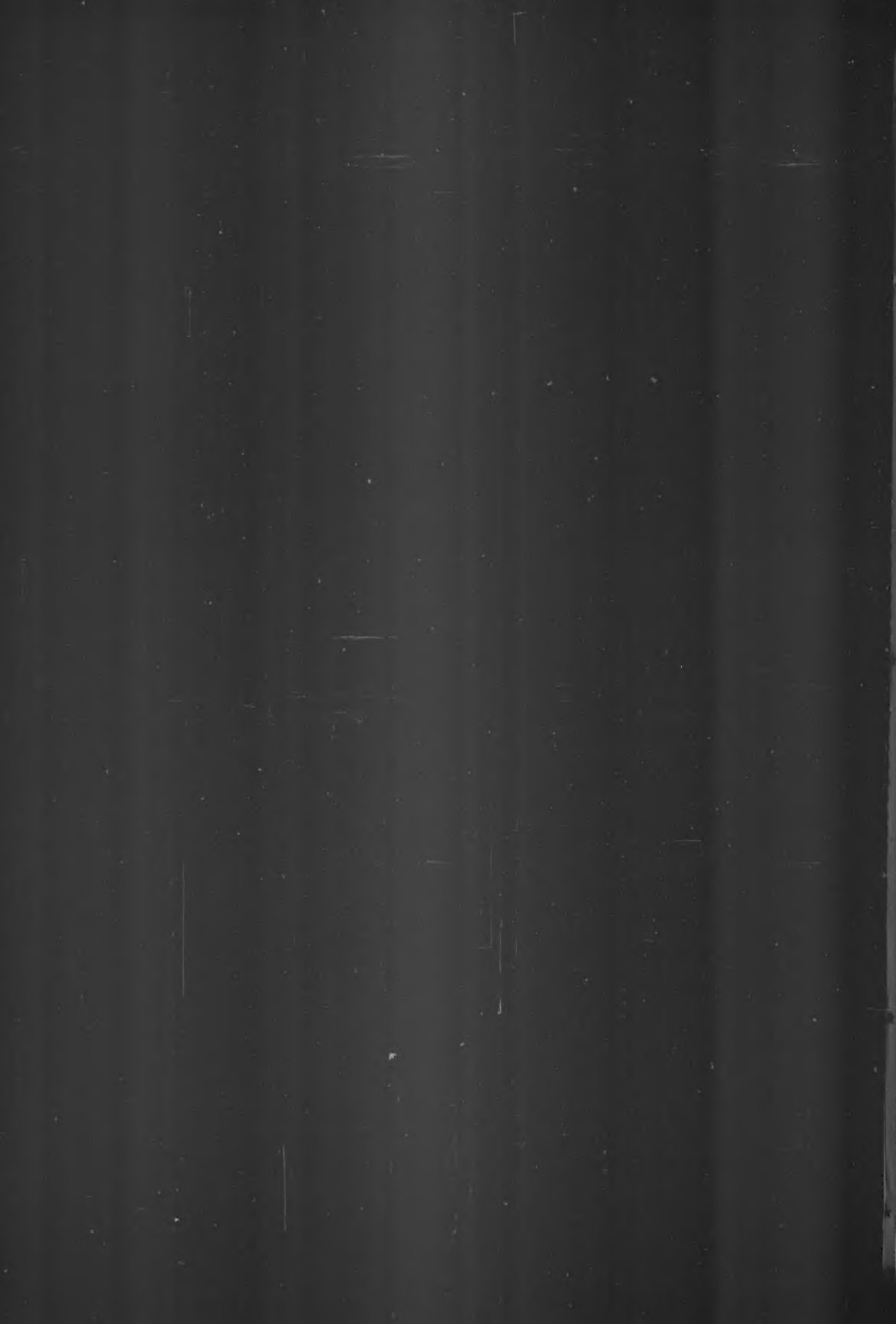
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Issued April 6, 1922

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## A LARGE TERN COLONY IN TEXAS

By J. R. PEMBERTON

WITH ELEVEN PHOTOS

**D**URING the first two weeks of May, 1921, while working the country between Brownsville and Point Isabel, Cameron County, Texas, and the shores of the many lagoons near Point Isabel, and also on a trip to Green Island, I was constantly wondering where the great numbers of terns which were nearly always in view could be nesting. It was not until May 14, when I was working about eight miles west of Point Isabel, that I found the place. I was searching for nests of the Long-billed Curlew in the grassy meadows adjoining the sloughs and salt-water covered areas of this delta country of the Rio Grande River. I noticed both Gull-billed and Common terns were fishing in the waters; but it was not for some time that it finally dawned on me that they were carrying the fish away with them instead of eating them on the spot. This, of course, was news, so I ascended an eminence of perhaps twenty feet elevation and watched the terns. They all flew straight away toward the center of a very large body of water called the Bahia Grande, and using my glass I saw a low flat island and hovering over it in several places a shimmering, fluttering, white mass which meant only one thing—there was the center of operations of the terns.

I judged from experience that the mile or so of water which separates the mainland from the island would not be deeper than three feet, but in order to carry some cameras I got a small boat and made my first visit on May 16 in company with a Mexican fisherman. On that trip, by constant soundings, I found that the water's depth was never greater than two feet, so my next trip on May 23 was made by wading across. Mr. A. J. Kirm accompanied me on the second trip. R. D. Camp, who is both Federal and State Game Warden in that district, made a trip with Mr. Robert Runyon on June 5. The remarks on each of the breeding species which follow are drawn from notes made on all three of the trips.

Now, a large tern colony may be an old story to some of our fraternity, but I am sure that the vast majority would have been as interested as I was upon first seeing many thousands of terns belonging to seven different species rise from their nests. That matter of the seven species is important—here was a

chance to note the habits of each and compare them on the spot with one another instead of after, as in some cases, years of elapsed time. Also a collector of eggs had here a wonderful opportunity to acquire a representative series showing the maximum variations in color, shape, size and markings in thousands of eggs. For the photographer with sufficient time and apparatus the opportunities were legion.

The breeding grounds turned out to be on three separate islands. To the west is a true island of about ten acres extent and rising to a height of twenty feet above the water level. A bluff forms its southeastern side and the top slopes northwestward into the water. The prevailing winds are from the southeast, so that this island has well-sheltered north and northwest shores. East of this island a distance of a half-mile are two shoals of dried mud fairly well covered with salt grass and some associated shrubs. These two shoals are of about twenty acres extent each, and they do not rise out of the water at any place more than a scant foot. Both have an irregular outline, and the north-

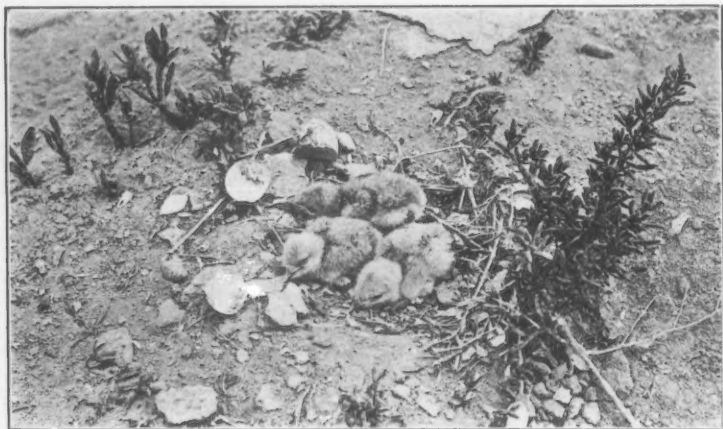


Fig. 14. NEST AND NEWLY HATCHED YOUNG OF THE GULL-BILLED TERN. CAMERON COUNTY, TEXAS.

Photo by Robert Runyon.

ernmost of the two has an encroaching embayment which occupies a part of the center.

It was the southernmost of the two mud shoals which was first visited. As it was approached in a small boat the white cloud above resolved itself into birds. As the landing was made and we stood up in the boat an almost unbelievable number of terns rose from the grass and joined those already in the air. The din and shrieks, made in great part close to one's head, rendered conversation practically impossible. The air was full of flying terns. But this effervescent demonstration soon blew its head off and a large part of the birds settled back upon their eggs. It was a hot afternoon, the sun glaring down from a cloudless sky and glaring up from the salt crystals in the mud. As we walked, or rather waded in the mud, for the crust was not strong enough to support us, across a bare area toward the grassy zone, we had to pick our way carefully in order not to smash eggs underfoot. Nests seemed everywhere.

Even a casual glance into the air or an analysis of the sounds coming out of it showed one that there were several species of terns present. A careful check showed eight species, and this number was not changed subsequently. They were, in order of abundance, the Gull-billed (*Gelochelidon nilotica*), Common (*Sterna hirundo*), Least (*Sterna antillarum*), Caspian (*Sterna caspia*), Royal (*Sterna maxima*), Black (*Hydrochelidon nigra surinamensis*), Cabot (*Sterna sandvicensis acuflavida*), and Forster (*Sterna forsteri*). We found them later to be all breeding with the exception of the Black Tern, which was evidently a tardy migrant, loath to leave these "happy hunting grounds" for the north.

The Gull-billed Tern was far and away the most numerous, and I hesitate to estimate the population. Remembering my Green Island experience with the Reddish Egrets I would certainly say that this tern was present in double or possibly treble the number of the Egrets at Green Island. It would certainly be many thousand, and apparently all were breeding. We later found that



Fig. 15. NEST AND EGGS OF COMMON TERN. CAMERON COUNTY, TEXAS.

Photo by Robert Runyon.

this species occupied all three islands and was the only one which did so. On May 16, breeding was at its height. Building had finished and all nests contained either eggs or young.

The nests varied in architecture greatly. Some consisted of a mere cleared spot surrounded by a rim of broken bits of shells, dry mud, and fragments of salt grass stems. Others were considerable piles of grass and mud, well dished at the top, and partly lined with finer salt grass. In a few of the latter class the rim was ornamented with bits of shell. On the western island the nests were arranged in more or less of a row, following the high water limit; but on the mud shoals they were placed apparently at random, some amid the grass and others in the bare spots. Full sets of eggs consisted of two or three, no sets of four being found. The degree of incubation varied from perfectly fresh eggs to eggs which were visibly hatching. On the 15th all young were in the downy stage and were colored a dull tan which harmonized closely with



the earth and rendered them very inconspicuous when not moving. Many of them hit for sea as we came near them and swam some distance away from shore. In many nests were found freshly caught fish, but whether destined for the brooding birds or the soon-to-be-hatched young was not apparent. There were many dead young and some were seen killed by the Caspian Terns, who were doubtless furious at our intrusion into their homes. On May 23 more young were in evidence and many were in their pin feathers, much more spry and wary, running without falling, and swimming with ease.

The Gull-billed Tern is extremely vociferous when its nest is approached, but not nearly so much so as is the Common Tern. The latter is quite pugnacious and its voice is sharper, shriller and more nervous in its character than that of the Gull-billed Tern. There is a monotonous beat or timbre to the cry

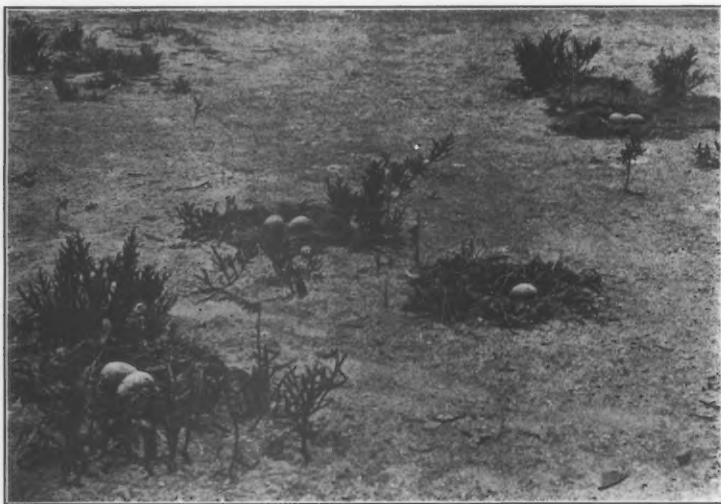


Fig. 16. PART OF THE CASPIAN TERN COLONY. CAMERON COUNTY, TEXAS.

of the bird which renders it quite distinctive to my ear. Bent describes this cry as *katydid-katydid*, and that seems to me to be a perfect rendition. The Gull-billed does not return to its nest as quickly as the Common, but beats in haphazard fashion back and forth before finally dropping. The Common Tern, quite the opposite, returns quickly to its eggs after completing its furious attacks on the intruder. The Gull-billed forages farther from home than any of the other terns. I saw individuals at Brownsville, a distance of fourteen miles, catching minnows and carrying them unswallowed back in the direction of the colony.

The eggs of the Gull-billed Tern present more variation than those of the other small terns. The usual type is a light brownish, well spotted with darker brown, the spots being large. Then there is a light bluish-gray shell with very dark brown spots; and the rarest type has a gray shell beautifully marked with



chocolate spots and blotches, and resembles eggs of the Sharp-shinned Hawk to some extent.

The Common Tern was found to nest only on the two mud islands. It was present in enormous numbers also, several thousand would be quite conservative. It selected for its nesting site the more thickly-grown grassy areas, and while it nested in some cases inside the Gull-billed area, the main colony was entirely separated from the latter. The nests were distinctively better built than those of the Gull-billed, with more grass, less mud, and a more neatly shaped cup for the eggs. Usually the nest was sheltered on one side by a sprig of salt grass. Nesting had evidently commenced simultaneously with the Gull-billed, for on May 16 all nests contained eggs and quite a few small downy young were found. The young of this species were similar in appearance to those of the Gull-billed.

Eggs were found to vary in color less than in the Gull-billed. The usual type was a greenish-olive shell with brownish and blackish spots. Some tended



Fig. 17. NEST AND SMALL YOUNG OF THE CASPIAN TERN. CAMERON COUNTY, TEXAS.

Photo by Robert Runyon.

toward a totally brown shell and some were nearly blue. The egg is smaller than that of the Gull-billed, more slender though nearly as long. All nests contained either two or three eggs and none with four were found.

We found the Common Tern to be the most pugnacious, determined and persistent fighter of them all. On the wing it was more agile and graceful, with perhaps more speed than the other small terns. It swoops closer to one's head, cries louder and oftener, and attracts more attention than the others. It also goes to the other extreme, however, in sinking more quickly and quietly to the nest, following the attack on the intruder.

Forster Tern was present in very limited numbers, perhaps less than 100. It associated with the Common Tern more than with the Gull-billed. I found the red bill to be the easiest distinguishing character in this bird. It was found nesting in an area between the main colonies of the Gull-billed and Common on the southern mud island. The nests were like those of the Common in being well built, but the bird had evidently commenced nesting later, because all eggs were fresh on May 16 and no young birds were seen. All nests contained

three eggs, and the eggs were distinguished from those of the Common Tern by the depth of green color and the numerous small black markings. This species is less demonstrative than either the Gull-billed or the Common Tern. Its voice resembles somewhat that of the Common but can easily be distinguished from it. This point marks the southern limit of the breeding range of this species.

The Least Tern was present in large numbers on two islands, the western and the northern. Why it was not present on the southern is a question, but I assume it to be because of the presence there of the vicious Caspian Tern, which here took the "place in the sun" usually occupied by some gull in other water-bird colonies. This little tern nested in a peculiar manner, all nests being strung out in a ragged line following a line of flotsam of all descriptions demarking a former high water. This line was perhaps thirty-five feet from the shore. The nests were about twenty-five feet apart and consisted solely in a slight depression in the earth which had been worn by the bird in its frequent turnings. A few had meager ornamentation in the form of some bits of broken shells placed near the nest but not arranged concentrically about it. On May



Fig. 18. EGG FIELD OF THE ROYAL AND CASPIAN TERNS, EGGS OF THE LATTER BEING ON THE FAR SIDE AND TO THE RIGHT OF CENTER LINE. NO EGGS OF THE CASPIAN TERN INSIDE THE ROYAL TERN FIELD.

16 every nest contained two eggs nearly fresh. On the 23rd no young had yet appeared, but on June 5 Mr. Camp found a few small downy young.

The Least Tern is quite alert when on the nest, leaving it to fly at the intruder long before he is near the nest. At the first cry of alarm all the terns leave their nests and flock about the cause of the disturbance; but they shortly fly back to watch over their own eggs, indicating by their hovering where their nest is. Attacks are made at one's head by the owners of the nearest nest only, adjacent nest owners taking up the fight where the others leave off, as one walks along through the colony. This bird does not like to be looked at and will maneuver so as to get in the rear before making its furious dash at one's head. The male of this graceful species has a habit of bringing small fish to the female. The male alights on the sand at some slight distance from the female and walks slowly toward her. When he reaches her he shows the fish and then encircles her several times, gently teasing her, but finally presents it to her. I saw this performance many times and never tired of watching it.

The Caspian Terns occupied only the southern mud shoal island. There were probably less than 100 pairs. They occupied a distinct area, a rather

bare strip parallel to the shore and about fifty feet from it. Nests were strung out in a loosely bound group and averaged about ten feet apart. Nests of no other species were to be found within that area. Some nests were very well made, consisting of mounds of grass and mud, well shaped, and dished at the top for the eggs. They were not high but gave the appearance of solidity and permanence. Others, especially some found by Mr. Camp on June 5, were no nests at all, the eggs being laid on the bare earth. These may well have been second layings of birds whose eggs were taken on our visits on May 16 and 23. On May 16 no young had yet appeared, although some eggs were quite well incubated. On the 23rd no young were noted, though some eggs were very far gone in incubation. On June 5 Mr. Camp found some small downy young. Most of the nests contained two eggs, but some sets of three were found.

The Caspian Tern leaves its nest silently and retires to a discreet distance from which it then watches the intruder. It was in no case found to make any demonstration or false attack on us. Its voice is a harsh *caarr* having some of the guttural quality of the squawk of the Night Heron. Caspian Terns keep to themselves in well formed flocks when not on the nests, and they apparently

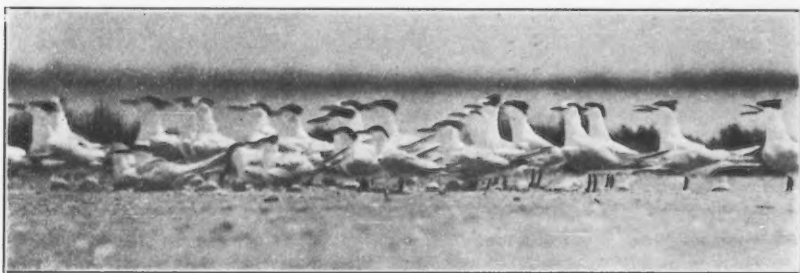


Fig. 19. ROYAL AND CABOT TERNS GUARDING THEIR EGGS. SOME OF THE CABOTS ARE SITTING BUT NONE OF THE ROYALS ARE. SAME LOCATION AS THAT SHOWN IN FIGURE 18. CAMERON COUNTY, TEXAS, MAY 16, 1921.

do not associate at all with their cousins, the Royal Terns. They are more wary than the Royal also, and good photographs could not be secured by the direct approach method.

Eggs of the Caspian Tern were found not to vary greatly. In size, shape and general type they were all the same. The ground color is dull olive gray with some life to it, the spots small, scattered and of a darker brown or lavender brown. One set has a coffee brown ground color and the markings are slender lines rather than spots, but that set is unique.

This was the only species which made any pretense of attacking its neighbors. Caspian Terns were seen time and again to dash at small downy young of the Gull-billed Tern which were running frantically across the flat away from us, snap them across the neck, back, or top of the head with the heavy bill, and leave the youngster a quivering mass, no longer a live tern. Of the two large terns, the Royal has more the look of a pirate, but apparently it is very peaceful, and, judging from its fraternal attitude toward the Cabot Tern, is the direct opposite in temperament to the Caspian.

The Royal Tern, with its satellite the Cabot Tern, was found nesting only

on the southern shoal. There were two separate egg-fields some 100 feet apart. The larger of the two was closer to the Caspian colony than any other, while the smaller was rather close to a part of the Gull-billed main colony. Each of these egg-field colonies had twenty-five pairs of Royal and fifteen pairs of Cabot terns, approximately. After seeing the laboriously constructed nests of such birds as the Verdin, the Golden-fronted Woodpecker (which in this country hews out its home from the tough pine telephone poles), and the Cactus Wren, one wonders at the reason for it all when the Royal Tern is seen to do quite as well in producing its progeny by the simple matter of laying its egg wherever it happens to be sitting last! All the eggs, as shown in the photograph, lay at an average distance apart of about eighteen inches, just a comfortable distance. The eggs of the Royal formed one continuous field, with those of the Cabot adjoining it to one side with no break in the continuity. When resting on the eggs the birds faced east and a majority of the eggs pointed west, that is, the large end toward the east. When this closely con-

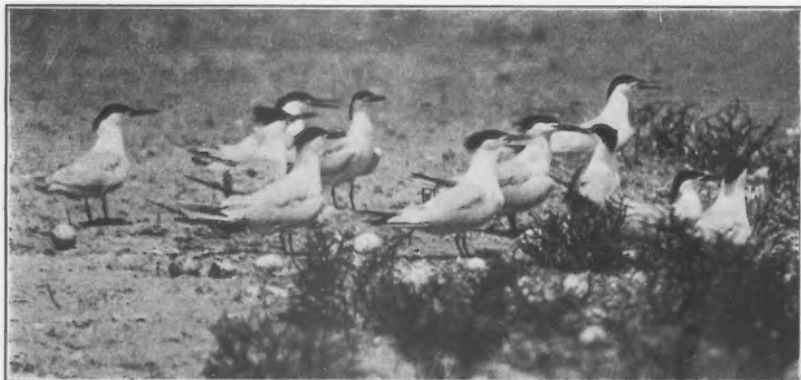


Fig. 20. THE CABOT TERNS ALLOWED OF CLOSER APPROACH DIRECTLY THAN DID ANY OF THE OTHER SPECIES.

gested colony was approached the birds raised themselves to their feet and stood, wings fluttering, crying at the tops of their voices. The Royals left the ground first when I was at a distance of seventy-five feet, but the Cabots stuck to their posts until I was closer than fifty feet. While looking the eggs over, the birds hovered overhead but made no attacks like the Common and Least terns. Very shortly after I left the egg-field the Cabots dropped onto their eggs, the Royals following soon after. All found their individual eggs with no fuss or fighting. Bent in his "Life Histories" speaks of these two species as the Damon and Pythias of the bird world and the comparison is admirable. The two species stick closely together even when on the wing, but the Royal seems to be the leader.

The eggs of the Royal Tern vary little in shape and size but in markings a great deal. Some eggs have a creamy brown shell, well spotted and blotched with dark greenish black, while others are spotless white with fine specks uni-

formly distributed over the entire shell. Only one set of two eggs was found and this may have been an accidental fusion of two adjoining nests.

The voice of the Royal Tern was not in quality distinguishable to me from that of the Caspian, being a loud, harsh, guttural *caaar*, but, as Bent says, pitched slightly higher.

On both May 16 and 23, eggs were for the most part, fresh or but slightly incubated, but on June 5 Mr. Camp found a few small downy young. Nesting must commence at the same time as with the Caspian and Cabot terns; possibly the Forster and Least should be included here too. The Gull-billed and Common get several days start on all the others.

The eggs of the Cabot Tern are to me the most beautiful of all water birds' eggs, and some of them rival the most handsome raptorial products. The variation is extensive. The ground color ranges from a beautiful, fresh salmon with a peach-like bloom to it, to pure white, and then to a peculiar greenish white, a ghastly white might be better. The markings range in size from small specks to large blotches covering a large portion of the shell, in color from



Fig. 21. BLACK SKIMMERS AND GULL-BILLED TERNS NEAR THEIR NESTS. CAMERON COUNTY, TEXAS.  
Photo by Robert Runyon.

brilliant black to chocolate and magenta. There is in some markings an opalescent quality, I mean a hint of several colors combined in the one as in the opal. It was a great temptation to take every Cabot Tern egg on the island, but one's blowing capacity is limited! With the exception of two sets of two eggs, all the Cabots laid a single egg. In one of the cases of two eggs I believe two singles were mixed, because the degree of incubation was very different in the two eggs, and they did not greatly resemble each other either.

The Cabot Tern has a decidedly distinctive cry, at least when excited. It is a loud *kirhitt-kirhitt*, according to Bent, and I agree with him exactly. There is a great deal of chuckling when the birds settle on the eggs after being disturbed.

Aside from the terns, several other kinds of birds were found nesting on the islands, and of these the Black Skimmer (*Rhynchops nigra*) was the most conspicuous. On May 16 they were pairing and scratching about in the earth of the western island. On the 23rd we found perhaps twenty-five nests, all containing eggs but none with the full set of four. On June 5, Mr. Camp found all the nests to contain four eggs. The Skimmers by their many peculiar

habits furnish enough material for a separate paper and I can not go into their ways here. Their nests were arranged in a row following the line of high water flotsam, as in the Least Tern, and consisted in a simple scoop in the earth made by the many wiggings of the bird when sitting.

On May 16 I found a nest of the Avocet (*Recurvirostra americana*) with four eggs ready to hatch, and this constitutes one of the most interesting breeding records for this group of islands. It has been reported as breeding once at Corpus Christi long ago; but Gulf Coast records are very scarce, for this is fully 500 miles south of the normal southern limit. Only a single pair of birds was seen and the nest was found by watching the supposed female return to the nest following a great broken-wing demonstration, which indicated plainly the presence of eggs or young birds. Mr. Camp took a second set of Avocet eggs on June 5, and I assume that they were a second laying of the same pair of birds.



FIG. 22. THE BLACK SKIMMERS FLEW UP AND DOWN THE BEACH AS LONG AS WE WERE NEAR THEIR NESTS.

Wilson Plovers (*Ochthodromus wilsonius*) were fairly common, but though evidently breeding, only one nest with two eggs was found. Mr. Kirn got this set. The nest was fairly well hidden under salt grass and located well inland from the shore of the northern mud shoal. Western Willets (*Catoptrophorus semipalmatus inornatus*) were numerous but no nests could be located. One brood of small young was found. Long-billed Curlews (*Numenius americanus*) were common on the mainland but not much in evidence on these small islands. Other water birds which visited the islands but which were not breeding there were the Roseate Spoonbill (*Ajaia ajaja*), Mexican Cormorant (*Phalacrocorax vigia mexicanus*), Reddish Egret (*Dichromanassa rufescens*), Louisiana Heron (*Hydranassa tricolor ruficollis*), Ward Heron (*Ardea herodias wardi*), and many small sandpipers which were undoubtedly migrants.

The only land bird in evidence was the Texas Horned Lark (*Otocoris alpestris giraudi*). This species evidently never strays out of sight of salt water





Fig. 23. NEST AND EGGS OF THE BLACK SKIMMER. CAMERON COUNTY, TEXAS, JUNE 5, 1921.

Photo by Robert Runyon.



Fig. 24. NEST AND EGGS OF THE AVOCET. CAMERON COUNTY, TEXAS, MAY 16, 1921.



of this Gulf Coast. I did not note it outside the limits of the salt marshes. It nests close to water, in fact four out of six nests found were on small islands and within twenty-five feet of water. Mr. Kirn found a nest with a full set of three eggs on one of these mud shoals. The nests are different from those of most of the United States horned larks in that feathers are used for lining. In the Canadian forms I believe feathers are usually included, due no doubt to general practice among birds there to circumvent the cold weather. This Texan bird uses the water-washed feathers of small sandpipers and the like, and this practice seems to me to be more instinctive than practical. It is like the use of snake skins in nests of the Crested Flycatcher. The main part of the horned lark nests consisted entirely of a fine ribbon-like sea grass which was washed up in great profusion on the beach. The grass was, of course, bleached until nearly white.

During both our visits in May we did not note any signs of coyotes. This seemed very strange to me, because the animal is really numerous everywhere on the mainland and was seen daily. It would be an easy swim to the islands, and with a great reward at the end. Rapacious birds are almost entirely absent from that region and there are no rodents on the islands. It thus looks as though (aside from minor depredations by visiting oologists, perhaps every ten years) the terns have established themselves in a very well protected breeding ground. Mr. Camp writes me that steps will be taken to officially protect the colony, in addition to the natural protection already existing.

*Tulsa, Oklahoma, January 25, 1922.*

#### NOTES ON FOX SPARROWS IN CALIFORNIA IN THE AUTUMN OF 1921

By JOSEPH MAILLIARD\*

THE fall field work for 1921 in the Department of Ornithology of the California Academy of Sciences was so planned as to include further observations upon the fox sparrow group during the southerly flight from the threatening grasp of the northern winter.

As the autumn field work for the two previous seasons, carried on in the area covered by the Inner Coast Range (Condor, xxiii, 1921, p. 178), showed results that were practically similar insofar as concerned the species noted, the scene of activity for the fall of 1921 was shifted to the adjacent coast itself, that is to say, the northwest coast of California. This territory was selected principally, however, because it made possible the combination of fox sparrow work with another scheme which was in reality the main object of the expedition, the results of which will appear later in a separate paper.

It has been discovered that the subspecies of fox sparrow (*Passerella iliaca*) wintering along the coast of California in what is known as the "Humid Coast Belt" differ to a greater or less extent from those found a little farther inland at the same latitudes, but there are no published records of investigations of the conditions existing in the former territory during the migration

\*Contribution no. 130 from the California Academy of Sciences.

period of early autumn. Hence it seemed advisable to get some idea of what was taking place there at this season of the year. While the other, and main, object of the fall work would interfere with our settling down in any one spot to keep daily watch, the combination of the two schemes seemed most advisable and worked out fairly well.

For this work Mr. Chester C. Lamb, an old member of the Cooper Ornithological Club, desired to accompany me, and he was taken on as temporary assistant, his car of an exceedingly well-known, if often caricatured, make being our means of transportation. Sometimes it transported and sometimes it didn't.

The most northerly objective point was Requa, Del Norte County, California, which was reached on September 15. A stay was made here until September 21, but, much to my surprise, no fox sparrows were seen. I had confidently expected to find the Townsend and Sooty Fox Sparrow scratching away at the edge of the woods or under thick brush, but, although our camp was on the verge of a magnificent redwood forest and near some very good brush cover for this genus, none was discovered.

When we left Requa on the latter date, a sharp watch was kept along the road for sparrows, with the idea that we might camp at any spot where some were met with; but not one was identified as we slowly drove along, although we passed through miles of very good cover, especially near what is known as Big Lagoon, between Trinidad and Orick, Humboldt County.

Having no encouragement to stop on the way, we went on to Eureka to consult with Mr. C. I. Clay, another Cooper Club member, who has been travelling over the roads of Humboldt County for enough years to know every foot of the country where any roads exist. My intention had been to make for the ridges in the vicinity of Bridgeville, on the road from Fortuna to the Sacramento Valley, but Clay thought that this would take us too far inland for our purpose before striking good fox sparrow country; so, instead of following the van Duzen River to Bridgeville, I decided to go to Kneeland Prairie, about fifteen miles southeasterly from Eureka, actual distance, but some twenty-four miles by winding road. On September 22, we went into camp at the extreme easterly end of this "prairie" (all open rolling land, whether at sea level or on top of a mountain is called a "prairie" on the northwest coast), at an elevation of about two thousand feet on the edge of timber and brush land, some four miles south of the Kneeland post office and facing Iaqua Butte. The narrow mountain ranges all through this part of the country have a north-westerly-southeasterly trend, with small rivers lying between them. Hence any birds migrating directly north or south must necessarily cross diagonally over these ranges; or else those following the ranges or valleys between would be diverted into the interior of the state if moving south, or out into the ocean if moving north.

Our camping place was chosen on account of its being where three ravines headed, one running up from the Mad River Valley and two from a small creek flowing into the Eel River system, as well as on account of its being near the lowest saddle in the range for a long distance, consequently the most likely place for birds to cross over from one valley to the other. There was good cover for fox sparrows in this vicinity, although possibly not the most attractive food.

We found these birds very scarce at first, in fact finding none at all on top of the ridges during the first few days of our stay, most of those noted being in the canyons on the Mad River side in partially brushy, cut-over timber. Here we found some signs of scratching along an old wood road. Lamb saw several fox sparrows pretty well down this canyon on the morning of September 23, and of these he obtained one specimen.

The next morning I went down this same canyon along the old wood road and saw five fox sparrows, securing two specimens; but they certainly were not present in any number. Those noted were in a mixed sort of brush consisting of second-growth tan-bark sprouts, mountain mahogany, spiraea, California bay trees, and madrone, with a little wild lilac scattered through it. Lamb found a few of the sparrows down another and lower ridge, scattered along, but there was not much activity in evidence. The 25th was too rainy for us to go into the brush, but on the 26th Lamb ran into quite a number on this same ridge, evidently part of a considerable movement working along singly or in small groups. I tried watching a trail in the brush near the top of this ridge where there seemed to be a likely place, but was rewarded by the sight of only one fox sparrow, the flight evidently passing below me toward the saddle referred to previously.

We stayed at this camp until September 30, noting a few of the sparrows every day but not in any numbers, and concluded that it was getting rather late, judging from former experiences in this line, for any large migrating movement. On this date we moved over to Capetown, near the mouth of the Bear River, about twenty-five miles southwest of Eureka, passing a couple of days encamped in the bed of the river about half a mile from the ocean.

A very steep hillside opposite us was covered with a dense growth of hazel and salmon-berry bushes in which a considerable number of fox sparrows were happily and safely—safely as far as hawks were concerned, at least—ensconced. It was very difficult to do much in this dense brush and, to add to this, the fog and wind threatened to make it still harder to carry on observations here, so we broke camp and moved farther inland to obtain shelter from some projecting ridge interposing between ourselves and the sea.

On October 2 we moved about fifteen miles (bee line) farther south to an attractive spot on the Mattole River, five miles south of Petrolia (Humboldt County), and tarried there to see what we might find. Here again we found fox sparrows enjoying themselves in suitable spots, and of the same subspecies as hitherto noted. Proper food and cover were present and a limited number of specimens was taken. As before remarked, fox sparrows were not the only object of this field work and in fact were secondary, but a good deal of time was devoted to observing them and to getting sufficient specimens for identification, although the primary object interfered with our remaining long enough in any one place to exhaust fox sparrow possibilities.

While we were in Eureka, Clay had told us of a large thorn-covered area near Shelter Cove on the coast, and from his description of it I became anxious to reach this country to see what might be going on there, and concluded to make it our immediate objective while the weather held good. Inquiries along the road elicited the information that there was an old unoccupied cabin in a clearing near the bridge over the Mattole River on the road running from Briceland to Shelter Cove that would do for shelter in case of a storm, and

this we found without difficulty. This cabin was about two miles northwest of what is down on the current maps as Thorn, near the southern boundary of Humboldt County, but which is only a ranch where the Thorn post-office was maintained for a while. The latter has been moved recently to another ranch nearer Shelter Cove.

A large area in the vicinity of our camp was covered with a thick growth of the white thorn, which we found to be a sort of "buck brush" (*Ceanothus incanus*), interspersed in places with "wild coffee" (*Rhamnus californicus*), and "wild lilac" (*Ceanothus thyrsiflorus*). Thorn is only three or four miles from the south boundary of Humboldt County and at this camp we were only six or seven miles from the ocean, but separated from it by quite a high ridge which must cut off a good deal of the usual ocean breeze and accompanying fog, to judge from the appearance of the vegetation. It certainly affected the climate, for we had nipping frost in the morning and high temperature in the afternoon, which is unusual so near to the ocean at this time of year. We made this camp on the afternoon of October 4, in time to get settled and to look around a little before the early dusk of the autumn day.

Before sunrise the next morning we were out looking for fox sparrows and we assuredly found them. There were not so many in the flat surrounding the cabin, although they were fairly numerous even there; but in a narrow canyon near-by there were more individuals than I had ever seen in one place anywhere. In fact, I saw more in the two mornings here than in all my life before and yet I have been making a "hobby" of chasing around after this particular genus for a good many years past.

On the morning of October 5, Lamb was directed to work down the Mattole River to look especially for certain birds in that direction, while I went into the thorn brush to observe the fox sparrows. It turned out, however, that Lamb came across so many small birds in the brush on his way to the river that he did not get any farther, but remained also to note fox sparrows.

For my part I found the thorn brush, especially where the berry or seed bearing bushes were more numerous, swarming with birds of several species, which need not be mentioned here, but among which fox sparrows were largely represented. These latter would come to a squeaking sound (made by myself) from all directions and were remarkably tame. Ordinarily the individuals of this genus are extremely wary, usually alert to dive into the shelter of a bush at the slightest sound or movement on the part of an observer, but here they would come right out on dead branches to within four or five feet of one and look him right in the eye! Even such motion as changing one's position or quietly raising a hand did not seem to startle them.

There were a great many dead limbs among the living brush, as the country appeared to have been burnt over frequently, in all probability to make browse for the goats which are kept there. In spots where the fox sparrows were most numerous it was not unusual to see from half a dozen to twenty-five or thirty of them among the dead branches of a good sized bush after their curiosity had been excited by a succession of "squeaks" on my part.

Although Lamb came across a good many of these birds in the direction in which he went he did not find them so numerous in any one spot as had been my experience in the canyon spoken of above. While there was considerable frost in the early morning at this place the afternoons were actually

hot, and the birds not much in evidence at that period of the day, although Lamb found a spot near the river late one afternoon that had quite a number moving around or feeding in it.

Whether the sparrows we saw on the 4th and 5th of October were migrating or not we could not at first determine, but there did not seem to be anything about their actions that would lead one to conclude that such was the case. In order to determine this better I went on the morning of October 6 to the narrow canyon where the fox sparrows had been so numerous on the preceding day. If none was there the conclusion that they were migrating would naturally be reached. A few "squeaks" from me, however, filled the surrounding bushes with an excited lot of birds eager to find out the cause for this unwonted noise. With a little lining up, from a couple to half a dozen individuals might have been secured at a single shot with my 20-gauge gun, could one have backed far enough away to avoid blowing them to pieces.

In order to see whether the fox sparrows were mostly congregated in this canyon a tour was made, where cattle or goat trails permitted, through the brush on a hillside covering an area of something like half a mile square, and it was found that these sparrows could be "squeaked up" anywhere in this territory, from one or two up to six or eight appearing every time such a trial was made. If a similar condition exists over all the territory covered by the thorn bush in this locality, these birds must have been here in thousands.

Later that morning I went down the river canyon and found fox sparrows scattered all along wherever suitable places occurred. At the same time Lamb went into the brush on another hillside across the river and reported similar conditions there, with "half a dozen fox sparrows around me all the time", as he expressed it. As the large majority of these birds were of the same subspecies not very many were taken, our efforts being principally confined to observation and to securing any individuals that appeared darker or lighter than the others. The thorn bush here bears quantities of small, round seeds about the size of, and somewhat resembling, the hemp seed used as a food for canary birds, and this food appeared to be what attracted such numbers of the sparrows to this locality.

While it would have been advisable to remain here for some time in order to learn more of what the fox sparrows might do, there were weightier reasons for our leaving it, which we did, much to my regret, on the morning of October 7. The only other stop on the way back to San Francisco was made on Rattlesnake Creek, near Cummings P. O., Mendocino County, California, a locality best known today by the presence in the vicinity of an inn, much frequented by automobilists, known as "Twin Rocks Hotel". Our means of transportation acted exceedingly mean and finally ceased to transport, so that here we were laid up for several days for necessary repairs. Although there was a good deal of brush on the hillsides in places and up some of the canyons, we failed to find any traces whatever of fox sparrows in this vicinity and our observations upon that genus were abruptly ended.

No matter at which camp fox sparrows were secured during this trip, they are apparently nearly all of one subspecies. They appear to be practically of the same form as the darkest colored individuals we had taken during the field work of the two previous autumns and which I have placed as the Sooty Fox Sparrow (*Passerella iliaca fuliginosa*), although but few are typical.

Many of the balance apparently show intergradation with other races and are very difficult to place. Swarth, in his "Revision of the Avian Genus *Passerella*" (Univ. Calif. Publ. Zool., vol. 21, 1920, p. 150), says of a number of *P. i. fuliginosa* he had examined: "With the exception of one or two specimens from Humboldt Bay they do not even approach typical *fuliginosa* very closely in appearance; they are placed in that category because their characters are such as to indicate a closer affinity to *fuliginosa* than to any other form, and probably illustrate intergradation between *fuliginosa* and some one of the adjacent subspecies."

In the work just quoted (p. 144) Swarth states that the Townsend Fox Sparrow (*P. i. townsendi*) is abundant near Humboldt Bay (California) in winter, and this statement led me to suppose that we would come across it in numbers. On the contrary, we found this form extremely scarce, securing only four specimens, all females, which could be positively identified as such, and three or four others which appeared to be between *townsendi* and *fuliginosa*. Of the four identified as *townsendi*, two were taken at Capetown, right on the coast; one near Petrolia, a little farther inland; and one at Thorn. Possibly the Townsend Fox Sparrow appears in Humboldt County in greater numbers later on in the winter, lagging behind the other species during the fall migration, or perhaps waiting until heavy storms or lack of food actually force an exodus from its breeding grounds.

Of the thirty-eight specimens taken, only the four mentioned above could be decidedly separated from *fuliginosa*; and but one or two even tend toward the lighter colored, more grayish, yet slender billed races found during the fall migration east of the humid coast belt, and these few cases are not very pronounced.

Representatives of what Swarth terms the "Schistacea group", with the gray or brownish coloration predominating, and a much more stubby bill, among which are the so-called "slate-colored" and "thick-billed" sparrows, were entirely absent from the territory we worked in, although careful watch was maintained for strays of those races. Nor was the "Iliaca group", of bright reddish and clear gray coloration approaching the eastern fox sparrow, met with in a single instance.

This seems to show that while the darker races select the coast territory for the line of flight, some do stray toward the interior, and that no individuals of the other two groups are attracted toward the coast until fairly well south, say, to Sonoma or Marin County.

While the work above outlined has not been sufficiently systematic or long continued to obtain the amount of information upon the subject which it would be desirable to have, it has been sufficiently so to give a good idea of the conditions in the territory covered. With similar fall work in sections farther eastward, which it is hoped will be accomplished in the near future, a good deal more will be added to our meager store of knowledge concerning these groups, and a good working basis established for more detailed operations. It is with the hope of stimulating more widely spread interest in this matter, as much as to give the public the benefit of such observations as it has been in my power to make, that these papers upon fox sparrows are submitted.

San Francisco, California, January 6, 1922.



## A STUDY OF ROOSTING HOLES OF THE RED-SHAFTED FLICKER

By EMERSON A. STONER

WITH THREE ILLUSTRATIONS

IN A FAR CORNER of the cemetery in Benicia, California, is a small shack, fourteen by twenty feet, built of redwood and called the "pest house", for the reason that at infrequent intervals some case of small pox is quarantined therein. For several years there has been no occupant, and because the building is not often approached it has resulted that the walls on each of its four sides have been disfigured by the characteristic roosting holes drilled through the one-inch boards by Red-shafted Flickers (*Colaptes cafer collaris*). At the present time there are seven large holes completed or of sufficient size to allow the entrance of the birds, and in addition there are nine smaller excavations the completion of which the birds have either postponed or abandoned.

This is not the only building so perforated by flickers in Benicia, but it may be cited to illustrate this characteristic habit of the western bird, a trait not often shared by the flicker of the eastern states.



Fig. 25. "PEST HOUSE", BENICIA, CALIFORNIA, USED AS A BUNK HOUSE BY RED-SHAFTED FLICKERS.

The common impression of the casual passer-by seems to be that these excavations are made by some woodpecker for nesting purposes. However, it is very evident that they have no connection with nidification, but that the primary object of these excavations is to provide sleeping quarters. I am inclined to believe that there is also at times an element of drilling simply "for the fun of it"; especially does this seem to be the case when a number of holes are made in close proximity to each other and lead to practically the same point in the interior.

Any one of the holes in the building referred to above allows access to the entire interior, which is unlighted except through the excavations made by the bird. From his entrance he may get a "bird's-eye view" of a few pieces of



rough furniture, namely a bed supported by a box at each corner, a small stove, a table and a chair, and a few kitchen utensils. That the bird would be in search of a nesting site in such a situation is quite out of the question. Any support on which the bird might settle himself would be entirely dissimilar to the secure receptacle afforded by the usual cavity excavated by this species in a dead limb for the purpose of laying its eggs. Furthermore, the holes are drilled after the breeding season, in the fall or early winter months. At the present writing a fresh hole is nearly completed in this building. Though it is true our California winters in the Sonoran zones are not severe, *collaris* has no doubt discovered that it is much more comfortable to be indoors, especially on frosty and rainy nights. Any evening at this season a passer-by may frighten several flickers from the holes in the pest house.

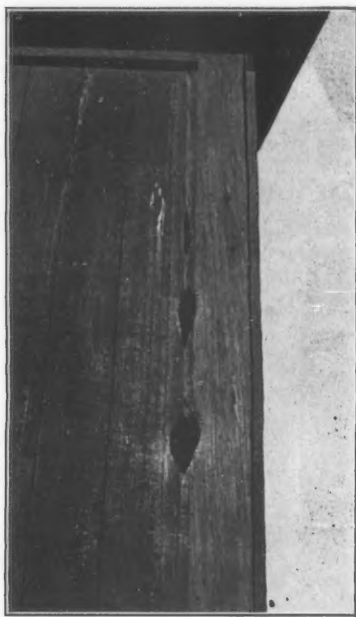


Fig. 26. HOLES DUG BY RED-SHAFTED FLICKERS TO OBTAIN SLEEPING QUARTERS.

At the approach of the breeding season there is a sudden exodus of flickers from Benicia and the immediate vicinity. This is no doubt due to the scarcity of suitable timber here for their nesting holes. During this season they are usually entirely absent, though in Contra Costa County on the opposite side of the Carquinez Straits, as well as in other sections of the San Francisco Bay region, one may find them breeding quite commonly. Absence of the flicker from our immediate locality during the breeding season is cited as further evidence that the holes made in buildings are not for the purpose of housing the eggs and young.

The dimensions of each of the larger holes in the "pest house" at their greatest diameters, as well as other interesting data in connection with the excavations outlined in the accompanying sketch (see fig. 27), are as follows.

- a.  $4\frac{1}{2}$  inches by 4 inches. This excavation was made between the top board of the window trimming and cornice, which latter consists of a plain one by ten inch board encircling the building directly under the projecting roof. In the interior, the top of the window casing offers an immediate roosting place for the bird. This projection is four inches wide and three feet long. It is littered with droppings as is also the floor directly below.
- b. Four inches by four and one-half inches. This is six inches to the right of *a* and opens up onto the same ledge. A square piece of board has been nailed from the inside in order to cover up this hole, which may account for the two excavations so close together.
- c. Three inches by two and three-quarters inches. Opening made within

the angle formed by the junction of the corner board and the cornice. On the inside the surface of the board for some six inches below the cavity has been pecked away for about half its thickness. The projection used by the birds for roosting is forty-two inches below the hole and consists of a three inch brace encircling the building on the interior, to which the side boards are nailed at a point about half-way up from the floor. This projection is littered with droppings for some distance each side of the hole, as is also the floor underneath. On approaching from the outside a person could hear the bird which was using this perch scramble up the inside of the wall to make its exit.

*d.* Two and one-half by five inches. This hole is six feet from the ground alongside the corner-board. The crack in this case is so near the corner-board

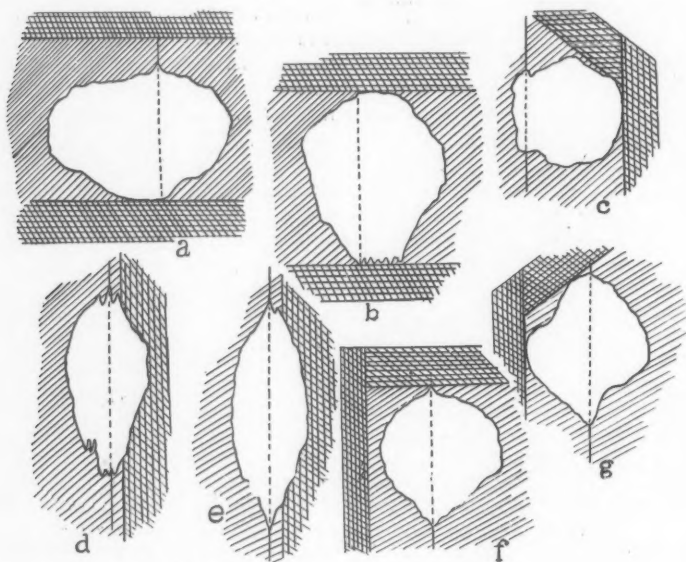


Fig. 27. SKETCHES OF SEVEN ROOSTING HOLES EXCAVATED IN THE "PEST HOUSE", BENICIA, CALIFORNIA, BY RED-SHAFTED FLICKERS. APPROXIMATELY 72 CUBIC INCHES OF WOOD HAD BEEN DISPLACED BY THE BIRDS IN THIS BUILDING.

that it was impossible to widen the hole proportionately in each direction without also attacking that board. This made a two-inch thickness to penetrate and accounts for the fact that the opening is so elongated. The hole opens directly onto a shelf, on which one of the birds roosts alongside a one-gallon oil can. The shelf is covered with droppings of the birds, as is also an up-turned wooden tub on the floor below.

*c.* One and three-quarters by six inches. This opening is eight inches above *d*, and the drop on the inside to the shelf is the same distance. Part of the corner board is chipped off here also. There is no apparent advantage in this opening, as the one below serves the same purpose.

f. Three and one-quarter by three and one-half inches. This opening is in the upper corner of the building, within the angle formed by the corner board and the trimming beneath the roof. The bird using this hole roosts on a two by three inch board forty inches below the hole, as is evidenced by the accumulation of droppings along this board and on the floor directly below.

g. Three and one-quarter by four inches. Between the angle formed by the juncture of the corner-board and the cornice, a similar position to c, on the opposite side of the building. Here a drop of forty-two inches is required to reach the same supporting boards to which more direct access is secured by making entrance through holes *d* and *e*.

Observation of these holes discloses the fact that the bird prefers, or more probably requires, a projection or some other foothold to which it may cling while chipping out a hole in a flat surface such as the side of a building. Each of the holes, as well as the incompleated ones not sketched, are drilled close against a board used as trimming (shown in the sketch by heavier shading) which furnishes a support to the prospective lodger. The broken lines drawn through the figures to show location of the joints between the boards would indicate that operations are commenced along this juncture, apparently for the reason that the crack facilitates the beginning of the project, though the boards are tongued and grooved and fit snugly together.

*Benicia, California, January 12, 1922.*

## A LAW GOVERNING THE ELEVATION OF THE NESTING SITE

By CHARLES KETCHUM AVERILL

IN Chapman's "Warblers of North America" particular attention is given to the vertical range in the trees of the arboreal species in their summer homes. Thus, the Cape May "lives in the tops of high coniferous trees". The Blackburn "is a lover of deep mixed growths and the upper branches of the biggest conifers". Other species of the same genus, *Dendroica*, are more lowly in range. The Prairie Warbler keeps near the ground. Of the Chestnut-sided we note that "its beat lies between the ground and the tops of small deciduous trees". In this way we may note the habit of each species and make a list of those that are high ranging and another of those that range low.

From the same source we may learn the nesting height of each species, and place this information opposite each. In the *Auk* (vol. 37, October, 1920, p. 572) I called attention to the fact that as length of wing is a factor in ease and power of flight, and the tail an impediment to flight, the bird with the longer wing and shorter tail might be called the better flier, and species so proportioned were the ones making the longer migrations. Taking the wing and tail lengths from Ridgway's "Birds of North and Middle America", the figures being the average given for the male bird in every case, and subtracting the latter from the former we may complete the table of the genus *Dendroica* by placing the wing and tail difference in a third column.

## TABLES SHOWING THE RELATION BETWEEN WING LENGTH AND HEIGHT OF NESTING IN THE GENUS DENDROICA

## I. LOW RANGING

	Nesting height	Wing minus tail mm.
Prairie Warbler	Bushes	9.8
Palm and Yellow Palm Warblers	On or near ground	12.5
Golden-cheeked Warbler	Up to 15 ft.	10.9
Magnolia Warbler	8 to 20 ft., once 35 ft.	11.4
Chestnut-sided Warbler	3 ft.	13.2
Black-throated Blue Warbler	2 ft.	14.1
Kirtland Warbler	On or near the ground	12.6
	Average	12.1

## II. HIGH RANGING

	Nesting height	Wing minus tail mm.
1 Pine Warbler	10 to 80 ft.	18.5
2 Cerulean Warbler	5 to 50 ft.	20.5
3 Cape May Warbler	low nesting	19.1
4 Townsend Warbler	rarely noted, once 4 ft.	17.2
5 Hermit Warbler	2½ to 45 ft.	15.6
6 Blackburn Warbler	10 to 40 ft.	19.5
7 Yellow-throated Warbler	30 to 40 ft.	16.2
8 Sycamore Warbler	similar to last	15.7
9 Grace Warbler	50 to 60 ft.	22.0
10 Bay-breasted Warbler	5 to 20 ft.	20.3
11 Black-throated Green Warbler	3 to 40 ft.	16.0
	Average	18.3

From these tables we learn that to range high and nest high is the prerogative of the long-winged birds. In no case does a short-winged species nest high. That high ranging and high nesting should go together is not surprising, since in feeding the young, the adult birds make so many trips to and from the nest that it is a great economy of time and labor to have the nest and feeding range near the same elevation, just as humans have found the flat more convenient than the storied dwelling.

Why only the longer winged warblers nest high is an interesting question to which it is possible to give an answer worth considering. The farther removed from the ground, the safer the nest and its occupants, so there is an influence toward high nesting. But the leaving of the nest by the young on the first flight is an event of great import attended with considerable danger, and the better flier will be able to leave with greater safety. We have all noticed the excitement in the family when the young bird takes its first flight and no doubt this is caused by the sense of danger. Thus those that build high are the longer-winged birds; but the converse is, of course, not true, as many long-winged birds nest on the ground.

Three long-winged species have been omitted from the table, the Black-poll, Myrtle, and Yellow warblers. These breed across the continent, north to the tree limit, where all trees are low and stunted. A preference for a high nesting site would be incompatible with such a range. Although at the southern limit of the breeding range occasionally a high nest may be found, we should expect as a rule these species to be low nesting, as is the case. The members of the genus *Helminthophila* are ground nesting and are not high

rangers in the breeding season, although they are arboreal. Other warblers nesting in trees are the Parula and Eastern Redstart, but there are not enough species in each genus to interest us. The Olive Warbler of the southwest is a high-nesting bird, thirty to fifty feet, and is decidedly long-winged.

Among the vireos the high rangers are the Red-eyed, Warbling, and Yellow-throated. These also nest high at times, the Red-eyed, five to forty feet, the Warbling, eight to forty feet, the Yellow-throated, ten to thirty feet\*. The White-eyed Vireo and its relatives, being much shorter-winged, live nearer the ground, nesting in thickets. It is not necessary to give figures of wing and tail length as all the members of the genus *Vireo*, to which the White-eyed Vireo belongs, have the rounded form of wing which is shorter always than the pointed wing and indicates poor flight ability, while the Red-eyed, Warbling, and Yellow-throated (genera *Vireosylva* and *Lanirovireo*) have pointed wings. The Black-whiskered, Philadelphia, and Solitary vireos are all tree-nesting birds of pointed wing but rather lower in preference of nesting site.

In the finch family all species that range well up in the trees are long-winged. Goldfinch, Purple Finch, Siskin, Redpolls, Crossbills, Rose-breasted Grosbeak and Indigo Bunting all nest above the ground. The Pine Grosbeak, arboreal and nesting off the ground, is one of the long-winged, and the Evening Grosbeak, also long-winged, nests up to twenty feet. In the genus *Spizella*, as is the case with nearly all "sparrows", the nest is on the ground or in a low bush, except that of the Chipping Sparrow, which nests a few feet up and is the longest winged of its kind. It is also less of a ground bird than its relatives. All our North American sparrows are short-winged and therefore low or ground nesting.

The Eastern species of *Icterus* follow the law also, as is seen from the table immediately following.

## EASTERN SPECIES OF ORIOLES

	Nesting height	Wing minus tail mm.
Baltimore Oriole	20 to 40 ft.	21.1
Orchard Oriole	10 to 15 ft.	9.0

## TYRANT FLYCATCHERS

## I. HIGH RANGING

	Nesting height	Wing minus tail mm.
Kingbird	15 to 25 ft.	33.9
Olive-sided Flycatcher	25 ft.	38.0
Wood Pewee	20 to 40 ft.	17.2
	Average	29.7

## II. LOW RANGING

	Nesting height	Wing minus tail mm.
Phoebe	Low	14.6
Yellow-bellied Flycatcher	On ground	15.1
Acadian Flycatcher	Up to 8 ft.	15.0
Traill Flycatcher	Near the ground	12.7
Least Flycatcher	5 to 15 ft.	9.9
	Average	13.4

\*All nesting elevations are from Chapman's "Handbook of Birds of Eastern North America."

## III. HIGH RANGING BUT RATHER LOW NESTING

	Nesting height	Wing minus tail mm.
Great Crested Flycatcher	Generally less than 20 ft.	10.0
THRUSHES NESTING ABOVE GROUND		
Wood Thrush	About 8 ft.	37.5
Gray-cheeked Thrush	Low trees or bushes	31.0
Olive-backed Thrush	About 4 ft.	30.8
	Average	33.1
THRUSHES NESTING ON GROUND		
Hermit Thrush		24.2
Wilson Thrush		27.9
	Average	26.0

Other birds ranging and nesting high are the Tanagers, Cedar Waxwing, Kinglets, Robin (at times), Bluebird, Crows, and Grackles. These are all long and pointed of wing. Apparently the only short and round winged bird in eastern North America to nest high is the Blue-gray Gnatcatcher, ten to sixty feet; this is the only exception to the law.

All our passerine birds that fly at any considerable elevation above the ground have the long, pointed wing, as Grackles, Red-winged Blackbirds, Cowbirds, Rusty Blackbird, Longspurs, Shore Larks, Titlarks, Robin, Kingbirds, Bluebirds, European Starling, Crows, Ravens and, of course, the Swallows. Even such as fly in flocks in the open above the trees are of the same wing form, as Goldfinches, Siskins, Redpolls, Crossbills, Purple Finches, Cedar Waxwing.

To sum up: Birds with long pointed wings may nest high or low, but the short and round winged are low nesting. In short, among groups of similar passerine North American birds the power of flight is closely related to the elevation of the nest in species that are arboreal.

Bridgeport, Connecticut, January 8, 1922.

## FROM FIELD AND STUDY

**Red-wings of the Imperial Valley, California.**—During the comparatively few years since agricultural development in the Imperial Valley of California has been in progress, many species of birds have extended their ranges to include this favored area, some have multiplied apace, and not a few of them are, to some extent, changing their habits to conform to new conditions. Chief among these in numbers is probably the Sonora Red-wing (*Agelaius phoeniceus sonoriensis*). Coming in from the valley of the Colorado River, where they were practically limited to the riparian association, the blackbirds have spread over the broad and fertile plain of the Imperial and, fattening unmolested on the grain crops, have become amazingly abundant. There seems to have been little competition in their ecological position, and, with few apparent enemies, their untold thousands have already become such a serious menace that it is being loudly and insistently demanded that some steps be taken to control their depredations.

Red-wings seem to be rather evenly distributed over the valley floor during the



breeding season, as might be expected; for then their diet consists largely of insects, and a given territory will support only a definite number of families. During September and October it is discovered that there has occurred a shifting of the population, and at that time they are not at all common about my ranch near Calexico but are reported as then fairly swarming at the northern end of the valley, where the greatest damage is done to the maturing crop of kaffir corn and milo. The reason for this seasonal shifting is obscure, as those crops are raised to an equal extent at the southern end of the valley, but a significant fact is that a vast area between the irrigated land and the Salton Sea is covered with a wilderness of tules, in which the birds may roost, while at the southern end the tules seem to be limited to a narrow strip along the river.

At about the time that the last of the kaffir corn is being harvested, the red-wings reappear in the vicinity of Calexico in large numbers. There are then no great fields of standing grain in which several thousand birds may sink without a trace; the bulk of the crop has been sacked for export, and what is needed for winter feeding is left "in the head" and placed in piles handy to the feed lot. Obviously, no farmer will view with equanimity the descent upon his corn pile of a couple of thousand red-wings, and law or no law, he will get down his shotgun. Whether from this likely cause or a more obscure one, the birds disperse after the harvest is over and congregate in small flocks, each numbering a few dozen individuals, in the neighborhood of the feed lots, where, with the cowbirds and towhees, they partake of a hearty meal of corn morning and evening, but spend the greater portion of the day about other business.

Whether the red-wings roost to any extent in the river tules near my ranch I am unable to state; but certain it is that they did not do so in the rank patch of this growth, fifty feet square, that formerly filled my horse pond. Rather did they repair for the night with a flock of feral guinea fowl to the protection of a large cottonwood, and during the short time in winter when this is totally without leaves, probably to a row of eucalyptus trees some distance away. During the hottest part of the day, they are in the habit of gathering in an exceedingly garrulous assemblage in the top of a cottonwood or other shady tree; or, as often, I have seen a flock of several hundred taking their siestas strung along the ground beneath the arrow-weed growing on a big ditch bank.

At the Colorado River, in January of 1913, I examined many old red-wing nests situated in tules, which latter, as far as I observed, were always growing in little sloughs that were partly shaded by willows, and hence the nests were protected from the full force of the spring sun during at least a part of the day. I know of no such associational conditions in the Imperial Valley, and the tules along the New River are unshaded. Although these grow in a particularly dense tangle, certain it is that the red-wings do not nest in this situation near my ranch. As the birds were particularly common, I was at a loss to discover just where they do nest, until May 6, when A. van Rossem noted several carrying nesting material into a cottonwood fully sixty feet above the ground; and we subsequently found that a considerable number had taken up their abode in this lone tree. The inference is that if the birds had at any time begun to nest in their usual tule location, they were speedily forced to change their abodes; for I am firmly convinced that unless they nested close to the ground, where they would be subject to the depredations of foraging raccoons and skunks, the intense fervor of the Imperial sun would be too much for them. Hence, the logical alternative would be the cooler protection of the cottonwood.

On the economic status of the red-wings of this district I am unqualified to speak. Their food must be secured with unusually slight effort, for in a large proportion of individuals, the culmen is found to project considerably beyond the gonyes, sometimes to a marked extent, and this condition is caused by the lack of the wear and tear usually encountered in gaining a livelihood. It cannot be gainsaid that these birds do an enormous amount of damage at certain seasons in certain districts, and that controlling measures will probably have to be adopted. But a word should be said in their defense. The yellow alfalfa butterfly is a serious pest, and I strongly suspect that when a flock of a hundred of the black fellows wheels over a field and settles into the waving alfalfa, the birds are seeking the festive caterpillar.—A. BRAZIER HOWELL, *Pasadena, California, December 1, 1921.*



**Slight Extension of the Breeding Range of the Western Lark Sparrow.**—As Lark Sparrows (*Chondestes grammacus strigatus*) are supposed to occupy the desert regions only in winter (Pacific Coast Avifauna no. 11, p. 116), it may be worth while to note that the species is a common breeder on the Mohave Desert, from Palmdale to at least twenty miles east of that point. Over this region, which lies along the desert base of the San Gabriel Range, their occurrence is general and not confined, as one might expect, to cultivated areas. While perhaps slightly more common in the pear and other deciduous orchards, they are nevertheless distributed over the unsettled country as well. Many pairs were seen daily from May 3 to May 14, 1920, and were equally common in the same locality during late April and early May of the present year. One nest containing five apparently fresh eggs was found May 5, 1920. It was built on the ground under a small dense bush in the yucca-juniper association at considerable distance from the nearest tilled land.—D. R. DICKEY AND A. J. VAN ROSSEM, *Pasadena, California, December 5, 1921.*

**Albino Robin Returning to Former Nesting Site.**—The following note is offered as a modest contribution to the mass of published data in support of the theory that birds return to a particular nesting site. A male robin showing patches of white on the wings and predominantly white on the under parts returned for three consecutive years to a garden in Summerland, British Columbia, where, each year, he acquired a mate and helped raise the ensuing family. His piebald appearance made him an object of suspicion to his brethren of conventional garb, and the garden witnessed frequent battles, from which he usually emerged victorious. He was known in the neighborhood as "Blewitt's white robin", and his non-appearance on the fourth year caused general regret in the little community. But four years would appear to be a relatively long span of life for a conspicuous albino.—J. A. MUNRO, *Okanagan Landing, British Columbia, November 26, 1921.*

**Vermilion Flycatcher and Red Phalarope at Long Beach, California.**—I wish to report the Vermilion Flycatcher (*Pyrocephalus rubinus mexicanus*) from the vicinity of Long Beach. I first saw the bird (a male) on November 20, and I saw it again on December 14. Some friends saw it December 11 and again December 17. Evidently just the one bird has taken up its abode there for the winter. Every time observed it has been within a radius of one-fourth mile. The habitat chosen is a slough with a few scattering willows and a few tules. For the most part the bird was observed perched on the top branches of willows but occasionally upon a fence post or tule. It displayed the usual flycatcher mannerisms by flying out, snapping up an insect, and then returning to the place from which it came.

There was an unusual migration of Red Phalaropes (*Phalaropus fulicarius*) this past fall. I saw about three hundred within an hour on the ponds of the Long Beach Salt Works. This was October 30. There was a great mortality among them this year. Dead birds were brought to the schools picked up by children in the streets or elsewhere. On the ponds mentioned above, dead birds were washed up in windrows. I could count nineteen from one position and twenty-one from another. I counted seventy-five within half an hour. The birds had no shot holes in them, and showed no external evidences of having flown against wires, but all the birds examined were emaciated in the extreme.—L. W. WELCH, *Long Beach, California, December 24, 1921.*

**Sonoma Thrasher in Humboldt County, California.**—While I was camping last October (1921) in company with Mr. Chester C. Lamb, near what is down on the current maps as "Thorn", a few miles north of the southern boundary of Humboldt County, it was a matter of surprise to us to hear the notes of thrashers among the thick growth of white thorn (*Ceanothus incanus*) surrounding our camp. This was situated only six or seven miles from the ocean shore, about east of the landing called Shelter Cove, and somewhat protected from ocean winds by a range of hills. These birds were very shy but we succeeded in securing three specimens on October 5 and 6, only one of which, however, had completely assumed the new fall plumage. These specimens appear to

be inseparable from *Toxostoma redivivum sonomae*. This is a more northern coast record than has so far been published, according to my recollection.

Another specimen of this species was secured near Cummings P. O., Mendocino County (California), and more were heard, but this locality is farther south and much more inland than Thorn, but not much farther north than Covelo, from which a record has been published.—JOSEPH MAILLIARD, *California Academy of Sciences, San Francisco, California, January 12, 1922.*

**Breeding of the San Diego Titmouse on the Mohave Desert.**—April 12 of the present year, the junior writer collected a pair of San Diego Titmouses (*Baeolophus inornatus murinus*), five miles east of Palmdale, in the yucca-juniper association. The female had apparently laid but a short time previously, and there was undoubtedly a nest near at hand. Another pair was heard (but not taken) a few hundred yards away. These two birds are most like *murinus*, but are not typical of that form. They are grayer dorsally, and the wing of the male measures longer than that of any coast slope bird we have. These differences possibly indicate a tendency toward *griseus*.—D. R. DICKEY AND A. J. VAN ROSSEM, *Pasadena, California, December 5, 1921.*

**A December Record for the Sage Thrasher in Colorado.**—On December 8, 1921, we collected a female *Oreoscoptes montanus* on the College campus at Fort Collins. The bird was in good flesh, and its stomach contained two small pebbles and remains of twenty-one flies (*Anocompta latiuscula*).—W. L. BURNETT, *Colorado State Agricultural College, Fort Collins, January 1, 1922.*

**The Bathing of Hummingbirds.**—From the scarcity of published references to the bathing of hummingbirds, one is led to believe that these birds are not generally aware of the benefits to be derived from an occasional bath. I have seen hummingbirds bathe so many times that I have considered it a rather commonplace occurrence, though none the less interesting, and while reading a recent paper by John Burroughs (*Harper's Magazine*, May, 1921, p. 789), I was somewhat startled by the statement that "This morning I saw a hummingbird taking its bath in the big dewdrops on a small ash tree. I have seen other birds bathe in the dew or raindrops on tree foliage, but did not before know that the hummer bathed at all." This refers of course to the Ruby-throated Hummingbird (*Archilochus colubris*) and it may be that that bird seldom bathes, else so careful and experienced an observer would have seen it long ago. Mr. H. W. Bates in "A Naturalist on the Amazon" described hummingbirds as bathing by dipping into a pool of water while on the wing. This also probably refers to birds unknown in California.

During the past five or six years, I have, several times each spring, visited a little glen in Golden Gate Park, San Francisco, in which at one place the water flows about a quarter of an inch deep over the flat surface of a rock. This rock has been appropriated by the Allen Hummingbirds (*Selasphorus alleni*) for a bathing place. The place at times was fairly swarming with the birds and the constant hum might lead one to believe that a nest of huge bumble bees had been disturbed. Suddenly with a buzz a bird would appear, hover over the rock for an instant, and then sprawl headlong into the water, stretching the wings and neck and lying prone on the rock, squirming the body and fluttering the wings until seemingly it became quite "water-logged". Then, just as suddenly, it would dart to a perch overhead, leaving a streak of mist in its wake like the tail of a miniature comet. Here it would preen its plumage. The surface of the rock was not over a foot across and I noted as many as four birds bathing simultaneously. Occasionally, after preening, one would return for a second dip.

Again on August 18, 1921, in Alameda, the Anna Hummingbird (*Calypte anna*) treated me to a rare performance somewhat similar to that mentioned by Mr. Burroughs. I had been sprinkling the garden when a male bird came to the rose bushes and literally sprawled on the wet foliage. For several minutes he crawled among the leaves, wiping the sides of his head, spreading the wings and tail, and mopping up as much water as possible, appearing ridiculously like a tiny parrot climbing about its cage. Following this he flew to a clothes line and preened his plumage. The garden sprink-

ler was turned on but he did not fly through the spray as I have heard hummingbirds will do.

That hummingbirds bathe, and quite thoroughly, then, is certain, despite the scarcity of references. No doubt they enjoy the bath as well as other birds, but the ease with which they penetrate thickets and cover distances has enabled them to escape observation.—FRANK N. BASSETT, *Alameda, California, January 21, 1922.*

**Notes on Some Water-fowl.**—Regarding the nesting of the Canvasback (*Marila valisineria*), I have on two occasions caught young ones, nearly full-grown, in New Mexico, where I believe they nest in considerable numbers in the mountain lakes. Half a dozen pairs used to breed every year on a prairie pond on the C. S. Ranch, the property of Mr. Charles Springer, near Cimarron, Colfax County, New Mexico. I found them there last in 1915. In California, the southward migration of Canvasbacks leaves the coast at about the latitude of San Luis Obispo, and from that point follows the mountain lakes south. Many of them winter in the lakes of the San Pedro Martir Mountains, Lower California, but one never sees them on either coast of the Peninsula. The records of a club like the Bolsa Chica show how rare the "Cans" are along the southern coast of California, and yet on the grounds of the San Timoteo Gun Club, near Banning, Riverside County, one used to bag two Cans for one of every other kind of bird!

I once handled two fine specimens of the Black Brant (*Branta nigricans*) that were shot by a friend on a reservoir near Redlands in 1903. They were members of a flock of about a dozen, and I remember my surprise at seeing this strictly maritime species so far from the sea. I question whether the numbers of these birds have been so greatly diminished by shooting. They still winter in vast numbers on San Quentin Bay, Lower California, where the few gunners who have sought them have had no difficulty in making disgracefully huge bags. Perhaps the brant have learned to avoid our coast entirely, and pass by each year, in scarcely diminished numbers, to winter on the Mexican bays, where the report of a shotgun is seldom or never heard.

I believe that changing conditions, brought about by the deplorable influx of settlers into California, lead one to think that the fowl have decreased more than is perhaps the case—though Heaven knows the decrease is pitiful enough. In 1919, when I spent a few months at home, I found that dozens of ponds and lakes formerly alive with waterfowl, were deserted. Were the birds nearly all dead, or had they changed their wintering places? The geese are gone, like the cranes which, less than twenty years ago, used to pass in thousands over Riverside and San Bernardino counties, migrating northward from the Colorado delta. But concerning the ducks, I am not so sure. There are at present in California two great wintering regions for countless myriads of wild duck: the Sacramento Valley about Colusa, and the Imperial Valley in the south. The number of fowl concentrated in these two regions is staggering to the imagination. Only two years ago I sat in a blind near Gridley and forgot to use my gun while I watched tens of thousands of sprig trailing like films of lace across the sky. I believe that in an hour not less than a quarter of a million birds passed southward. The rice plantations of this region account, in part at least, for the desertion of other parts of the valley; the great irrigated areas of Imperial, with the tule swamps where the New River runs into the Salton Sea, seem to me to account for much of the desertion of once populous waters in southern California. A generation ago ducks were almost unknown in the Imperial district. If Imperial were suddenly to go dry, and all the birds wintering there to scatter out, as formerly, over the lakes and marshes of southern California, the prospect might look less depressing.

The fresh water marshes of Lake Chapala, in the state of Jalisco, Mexico, form another haven for waterfowl. At one end of the lake there is a great area of flooded land cut by a veritable labyrinth of sluggish channels, 400 square miles, I should say. The far interior of this swampy paradise, reached after three days' travel in a native canoe, is a vast sanctuary for wildfowl, a region of gently-rolling damp prairies, set with small ponds, and traversed by a network of navigable channels leading to the great lake. I saw as many geese, White-fronted (*Anser albifrons*) and Snow (*Chen hyperboreus*), as I have ever seen in the Sacramento Valley, and the number of ducks was past belief, with some interesting species, like the Masked and Florida Black or Dusky, to

lend variety. A more thorough investigation of this field would be worth while, for I have reason to believe that several species of northern ducks breed there, and breed at a much later season than in our country. On November 20 (1909) I found a brood of young Shovellers (*Spatula clypeata*) unable to fly, and the natives told me that hundreds of ducks nested there, among them Gadwall, Dusky, Sprig, Shoveller, and Cinnamon Teal.

The South Pacific, where I am living now, is a poor place from the point of view of a lover of the Anatidae. We have only one duck in the islands south of the Line (though I know a man who claims that Shovellers come to Penrhyn Island every year about Thanksgiving time, and remain for two or three months), called *Anas superciliosa*, and reminding one of a small dull-colored Gadwall. Three migrating waders reach Tahiti every year from the north: The Pacific Golden Plover (*Charadrius dominicus fulvus*), the Wandering Tattler (*Heteractitis incanus*), and the Bristle-thighed Curlew (*Numentius tahitiensis*).—C. B. NORDHOFF, *Papeete, Tahiti, Society Islands, November 22, 1921.*

**Second Occurrence of the Yakutat Song Sparrow in California.**—On September 19, 1915, Mr. Laurence M. Huey took a specimen of *Melospiza melodia caurina* Ridgway, at Fortuna, Humboldt County, California. The bird is a female (no. C 281, coll. Donald R. Dickey), and becomes, I believe, the second recorded instance of the capture within the state of this rare winter visitant to the northwest coast of California.

The bird was taken on a brushy hillside in the immediate vicinity of Fortuna, and at a distance, therefore, of several miles from the sea. In this connection, it is interesting to note the wide departure from normal in the associational behavior exhibited during migration by this individual. In its breeding range and on its winter ground the bird is essentially a "beach-comber". This has been clearly indicated by the single winter capture heretofore recorded for California (Grinnell, Condor, xii, 1910, p. 174), and by the Oregon experience of Shelton (Condor, xvii, 1915, p. 60), and the Alaskan notes from Admiralty Island given by H. S. Swarth (Condor, xiv, 1912, p. 73). Here, on the contrary, it was found far inland in the characteristic habitat of the host of Townsend Fox Sparrows that were coming in at the time from the north, and in an association quite distinct from that of the beach.

Dr. Joseph Grinnell and Mr. H. S. Swarth have kindly compared the specimen with the birds from more northern stations that are now in their care at the Museum of Vertebrate Zoology, Berkeley, California.—DONALD R. DICKY, *Pasadena, California, December 22, 1921.*

**Rufous Hummingbird Tragedy.**—On April 24, 1920, Mrs. Stoner found in the back yard a male Rufous Hummingbird (*Setophorus rufus*), badly stunned and fluttering on the ground beneath the clothesline, with which no doubt it had collided. The line was one of the continuous wire lines working on a pulley at each end, and quite possibly in trying to avoid one of the wires it flew into the other, some ten or twelve inches above or below. It was taken into the house, but lived only a few minutes. The outer tail feathers measure 3 mm. in width, and the next to middle tail feathers are notched. The skin was preserved. This incident cites a date of the northward migration in this locality, as well as one of the many hazards birds have to contend with.—EMERSON A. STONER, *Benicia, California, December 31, 1921.*

**Wintering of the Nuttall Sparrow in Los Angeles County.**—Because of the paucity of records of this species from Los Angeles County, California, it may be of interest to note that this sparrow was found to be fairly common in Placerita Canyon, near Newhall, during December, 1920, and January, 1921.

Mr. E. J. Brown and the junior writer spent several odd days collecting in this locality with the following results: December 15, 1920, we took four adult specimens of *Zonotrichia leucophrys nuttalli* and saw several more at sufficiently close range to make us fairly sure that they were of the same form; December 30, 1920, we took three additional adults and saw what we were confident were two more; January 24, 1921, we took another adult.

All of these birds were either in the typical "song sparrow" cover of a damp willow bottom, or among the blackberry vines of a ranch garden.—D. R. DICKEY AND A. J. VAN ROSSEM, Pasadena, California, January 13, 1922.

**Kamchatka Sea Eagle at Kodiak, Alaska.**—The accompanying photograph is of the Kamchatka Sea Eagle (*Thalassoaetus pelagicus*), which was taken last summer on the island of Kodiak, Alaska, by a party of which I was a member. The capture was made August 10, 1921, at the outlet of a small lake without name, which is tributary to the upper end of Karluk Lake. The photograph was taken from the outlet stream, looking lengthwise of the smaller lake, which is about two miles long.

The bird was shot by a native who formed a member of our party, and who frequently hunts about Karluk Lake. He stated that he had observed this strange eagle



Fig. 28. KAMCHATKA SEA EAGLE CAPTURED ON KODIAK ISLAND, ALASKA, AUGUST 10, 1921.

on a number of previous occasions and had tried to capture it, and that this was the only bird of the kind he had ever seen. Bald Eagles were abundant in this locality.

My few notes state that the head was not white but was covered with feathers variegated much as in the Golden Eagle. The tail and leg feathers were white, as were the entire front edges of the wings. The feet and bill were extremely powerful, obviously larger than in the Bald Eagle, which we had for comparison. Both bill and feet were strikingly bright in color, of a deep golden yellow, which covered also the bare portion of the legs. The tail feathers were graduated.—CHARLES H. GILBERT, Stanford University, California, January 20, 1922.

**Red Phalarope in Southern California.**—At the October meeting of the Southern Division of the Cooper Club comment was made on the numbers of Red Phalaropes (*Phalaropus fulicarius*) dying on the beach. Several persons reported the birds also inland. On October 25 I saw twelve on a flooded meadow in Los Angeles on South Main Street near Manchester Avenue. At Wilmington tide flats, October 22, several flocks of twelve or more birds each were closely observed for several hours altogether. During the whole day only three or four bodies were found, although one sick bird was picked

up. Two birds shot from tide pools had so much fat I had to scrape the skins, but the others were thin.

Between October 3 and November 28, I visited the flats at San Pedro or the rocks at Point Fermin nine times. At all times when found the birds were actively whirling in pools or flitting and dabbing about on the ocean. Besides those mentioned I have found only a few carcasses.

August 23 and several days thereafter I observed a lone Red Phalarope very closely. When first encountered the bird was making short flights along the beach to dodge a small child who persistently trotted after it from place to place. Finally it took refuge on the water. In a few moments, after preening and resting, it returned and trotted easily and fearlessly before my slow advance, flying only when frightened and then but a rod or so, or out to the water. Kelp flies seemed to satisfy its sporting instincts and hunger, and the bird stalked them slowly and pointedly one by one. With bill and neck outstretched and lowered in line with a fly on the sand, a slow advance was made until with a pounce the hunt closed. If the fly escaped, the phalarope sometimes ran after it, bill out.

Another pose interested me. On finding a kelp mass decaying and drawing flies, the Phalarope approached closely and so low that his breast touched the ground, but the rear of the bird was high up. At times he would remain with breast down and pick at the flies much as a dusting fowl picks up a stray grain. Mr. L. E. Wyman reported similar "breast to ground" actions of two phalaropes he saw feeding by a kelp mass on the beach.

Upon the arrival of the Red Phalaropes, a local paper stated that the harbor was covered with "Mother Cary's Chickens".—ROLAND C. ROSS, *Los Angeles, California, January 2, 1922.*

**New Nesting Records of American Osprey in Northern California.**—As nesting records of the American Osprey (*Pandion haliaetus carolinensis*) in the northern part of this state are rather rare it was interesting to note two nests during 1921.

One of these was under construction in the top of the tall stump of a dead fir in a cleared flat on the north side of the Klamath River, near Requa, Del Norte County, California, on May 18. The birds were seen bringing material for building purposes.

The other record is of an Osprey's nest noted on the South Fork of the Eel River some miles above Garberville, Mendocino County, California.

This nest was noted by Mr. Chester C. Lamb and myself on October 7, 1921, as we were returning from a fall field trip up the coast. It was placed on top of a tall, slim, rather isolated redwood tree standing on the edge of the river, and was in plain sight from the highway, but some half a mile distant therefrom. While no birds were seen, it was unmistakably the nest of an Osprey. My brother, John W. Mailliard, had also noted this nest as he passed by a few days previously.—JOSEPH MAILLIARD, *California Academy of Sciences, San Francisco, California, January 12, 1922.*

**Kern County Notes.**—Field work carried on during the last two years in the vicinity of Buena Vista Lake, Kern County, California, has resulted in an extension of the ranges of several birds. Not only has the Suisun Marsh Wren been found breeding about the Lake, but an interesting arm of Mohave influence has been indicated by the presence in the locality of birds that were formerly restricted, in our belief, to the more eastern desert regions.

*Telmatodytes palustris aestuarinus*: A series of breeding marsh wrens taken in the tule about the shores of Buena Vista Lake were identified by Mr. H. S. Swarth as of this form. This extends the breeding range of this comparatively new race south to include the entire San Joaquin Valley.

*Amphispiza nevadensis canescens*: In our experience, this species has never before been found in summer save in the *Artemisia* association. Despite the absence of sage about this Lake, however, this is one of the commonest summer birds, adhering closely to the scrubby growth of *Atriplex polycarpa* which covers the hillsides and plains of the region.

*Bubo virginianus pallascens*: A pair of breeding birds and one juvenile taken by the authors on June 4, 1920, another juvenile taken June 22, 1921, the remains of an



adult bird found by the junior author on September 15, 1921, and a late fall specimen collected by L. M. Huey on October 21, 1919, agree in showing conclusively that the desert race of horned owl is the form found in the extreme southern San Joaquin Valley. Whether *pallescens* has invaded the region in recent years and supplanted *pacificus*, which was formerly supposed to inhabit the section, or whether it has always been an established part of the local avifauna, is a debatable question. But the latter hypothesis seems much the more logical when we consider that this region also supports other typical desert forms, such as the Leconte Thrasher and California Sage Sparrow.

*Otocoris alpestris ammophila*: The horned larks breeding about Buena Vista Lake exhibit affinities that are distinctly analogous to those which characterize the horned owls of the region, in that they seem related to the form of the Mohave Desert, rather than to *actia* of the more northern portion of the San Joaquin. A series of breeding birds from the vicinity of the Lake do, in a few instances, show a slight tendency in the latter direction, but the great majority are so close to typical *ammophila* as to be referable with certainty to that form. Breeding birds from Corcoran, Kings County, California, in the collection of A. B. Howell, are unqualifiedly *actia*, so that *ammophila*, in the San Joaquin, must be confined to the extreme southern end of the Valley.—D. R. DICKEY AND A. J. VAN ROSSEM, Pasadena, California, January 13, 1922.

**Position of Feet in Flight in Certain Birds.**—Here are several apparent "rules" in bird life that have interested me for some time, and they are passed on to the readers of THE CONDOR for what they are worth.

1. All water birds in flight extend the feet behind.
2. All web-footed birds, with short tails, spread the toes in flight, the membranes apparently acting as an elevator or rudder. This group includes the murrees, murrelets, auks, and puffins.
3. All perching birds in flight fold the legs forward under the feathers.

All the short-tailed, web-footed birds that I have had under close observation when getting under way do spread the toes, placing them side by side to form a wide flat surface, which is no doubt useful in flight. By the time these birds may have attained their regular speed, possibly the toes are relaxed, but they are then as a rule too far distant for accurate observation. I am not so certain that loons follow this rule. Grebes, which are lobe-footed, spread the lobe flat out in rising from the water, and, I think, close the toes after attaining full speed.—GEO. G. CANTWELL, Puyallup, Washington, January 20, 1922.

**Further Remarks on the Occurrence of the Buffle-head at Eagle Lake.**—We have read with interest Mr. Allan Brooks's comment on our record of the occurrence of the Buffle-head at Eagle Lake, California. Mr. Ray had received a similar letter from Mr. A. C. Bent drawing his attention particularly to the error in the identification of the young ducks shown in figure 33 of the Condor for November, 1921. It is evident that these are young American Mergansers. We do not wish to take up space unnecessarily in a discussion of this matter, but we believe a further account of the circumstances may be of interest, especially so, as Mr. Brooks has brought up several questions of doubt regarding the identity of the young following the female Buffle-head and also the actions of the male bird.

Mr. Ray and I feel positive that the young following the female are Buffle-heads and we can also vouch for the actions of the male Buffle-head. The error regarding the young ducks shown in figure 33, we believe, should and can be explained by the circumstances leading to their capture. Upon our first encountering the female and eight young, we recognized this as a new breeding duck for this locality and during our efforts to obtain a photograph it was noted that two of the young made several attempts at diving and in this way became separated from the parent. The remaining six kept well up with the parent and seemed to obey each warning. The diving efforts of the two young and the maneuvering of our boat caused a complete separation of the two from the parent and the remainder of the flock.

Several hours afterward, the two young of the photograph were found on the shore of the bay in which the female and young were encountered and not more than 50 yards from the point where the photograph, figure 32, was taken.



As the sizes of the young were apparently the same and no other duck with young was seen in the vicinity, we naturally assumed these were the missing two from the flock. After photographing, we returned these two to the small pond occupied by the female and it was noted that the female immediately began pecking at the two new arrivals. Upon a later observation of the group, we found that the female had only six young, instead of eight, she evidently having driven the two young away from the flock.

At least two explanations are possible regarding the occurrence of these two small young. They may have been separated from their own brood and joined the flock in which we found them, or it is possible Merganser eggs were deposited in the nest of the Buffle-head and hatched. The latter explanation seems the more probable to us on account of the juveniles corresponding in size with the others. It is not uncommon to find eggs of different varieties of ground-nesting ducks in the same nest and, no doubt, the same holds true of tree-nesting varieties as well.

Regarding the occurrence of the male Buffle-head, this bird was flushed from the bay before we were aware of the presence of the female and young. The male returned and was flushed at least twice thereafter from this small bay, and while he showed no particular solicitation for the young, it seemed obvious that he was the parent bird. In any event, he showed a decided preference for the small section of water occupied by the female and young.—JULES LABARTHE, *San Francisco, February 6, 1922.*

## EDITORIAL NOTES AND NEWS

The award of the Brewster Memorial Medal for 1920-21 has been made by the American Ornithologists' Union to Robert Ridgway in recognition of his successful labors on the "Birds of North and Middle America." Every ornithologist will heartily approve of the decision of the committee in charge of the award, that volume VIII of this great work was the most meritorious publication on the birds of America which appeared during the last two-year period.

On January 17, 1922, in response to an invitation from Mr. Charles L. Whittle, Mr. L. B. Fletcher, and others interested in the banding of birds, over 100 persons met at the Boston Society of Natural History Building in Boston and organized a new ornithological society to be known as the New England Bird Banding Association. The meeting was addressed by Mr. S. Prentiss Baldwin, of Cleveland, who during the last six years, by introducing bird-trapping as a means of banding birds, has done so much to show the scientific possibilities of the work. The Bureau of Biological Survey was represented by Mr. E. A. Goldman who spoke of the Bureau's plans in connection with the movement, strongly endorsing the organization of the new association and recommending the formation of other organizations of the same character at appropriate localities in the United States and Canada. Over 300 members are already enrolled in the new organization.

It is becoming increasingly incumbent upon active workers in any field of science to keep up with the times. Each one of us must know the literature appearing in his field. An indispensable aid to every serious

worker is the Zoological Record, published by the Zoological Society of London (Regent's Park). Mr. W. L. Sclater is editor of the "Aves" portion, the annual subscription to which is seven shillings six pence. The publication of the Zoological Record has been continuous throughout the war period, owing to local provision. But now, with greatly increased printing costs, it can be continued on the same plane of completeness only with outside support as well. It is a coöperative enterprise; hence the propriety of this suggestion that each Condor reader who is also a serious student in ornithology contribute to its maintenance by subscribing, at least to the extent intimated above.

The department of zoology of the Field Museum of Natural History, Chicago, has been completely reorganized under the direction of Dr. Wilfred H. Osgood, Curator of that department. In the division of birds, Dr. C. E. Hellmayr has been secured as Associate Curator, Mr. John T. Zimmer as Assistant Curator, Mr. Colin Sanborn as Assistant, and Mr. Boardman Conover as Associate. In the division of birds' eggs Mr. R. M. Barnes is Assistant Curator. In the division of mammals Mr. Edmund Heller has been made Assistant Curator. Messrs. Heller and Zimmer are about to leave for an extended period of vertebrate collecting in Peru.

Mr. A. S. Kibbe has recently made some comments in *The Gull* (organ of the Audubon Association of the Pacific) anent bird trapping and banding which to our minds deserve serious consideration. He says: "Trapping is not a diversion nor a spas-

modic pastime, but a business, with well defined duties and responsibilities. A bird trap must not be used like a mouse trap, to be baited and set and left to itself until one happens to think of it again. Bird traps should be open to constant observation and must be visited regularly and frequently, because: (1) birds of certain species will not submit to the trap but will kill themselves in efforts to escape; (2) birds that do not object to the confinement may nevertheless quarrel and injure or kill each other; (3) birds that you wish to protect and save may be killed by the other birds or by rats trapped with them; (4) birds are liable to be killed by exposure in traps overnight. . . . Trap and band, if you are competent and willing and able to do it properly; . . . but do not, yourself, nor permit anyone else to, bring terror or destruction to those birds that our Association is pledged to protect."

#### COMMUNICATION

##### THE BIOLOGICAL SURVEY BIRD COUNTS

To the Editor of THE CONDOR:

The Biological Survey began in 1914 to collect data on the numerical distribution of bird life in the United States. By such information, which is gained through counts made by volunteer collaborators, of the birds breeding on selected areas, it is possible to gain some knowledge of the yearly fluctuations in bird life and of the effect the present State and Federal laws may have on the increase of game and insectivorous birds. During the earlier years we received a very gratifying response to our request for assistance, but during the war many persons were unable to continue the work and interest in it has seemed to wane. It is desirable that these counts should be repeated on a large scale through a period of years in order that adequate data may be accumulated to make possible definite conclusions. Any one thoroughly familiar with the breeding birds of his vicinity can do this work, and will find it growing in interest from year to year. We are therefore again appealing to the readers of THE CONDOR in the hope that all who are able to do so will make one or more bird counts this summer.

The general plan of this work is to select a tract of land containing from 40 to 80 acres and representing as nearly as possible the average conditions for the vicinity. Some day, during the height of the breeding season, this land should be carefully gone over in the early morning and the male birds counted, which at that season are usu-

ally in full song and may be considered each to represent a breeding pair. The result of this count should be checked subsequently to be sure that all birds counted nest within the selected area, and that none have been missed. The count should not be made until the spring migration is over and the birds are settled on their nesting grounds. In the latitude of Washington, D. C., the best time for the first count is about the first of June; in New England and the northern states probably about June 10; and south of Washington, during the latter part of May.

Anyone who is willing to do this work is requested to send his name and address to the Biological Survey, Washington, D. C. Full directions for making a count and report blanks will be sent in time for plans to be made before the actual time for the field work. Since the Bureau has no funds with which to pay for this work, it must depend on the services of voluntary observers.

An added impetus should be given to this work at the present time by the report that the British ornithologists are contemplating a census of the birds of the British Isles, planned along the same lines as our own.

Very truly yours,

E. W. NELSON,

CHIEF, BIOLOGICAL SURVEY, Washington,  
D. C., February 1, 1922.

#### MINUTES OF COOPER CLUB MEETINGS

##### SOUTHERN DIVISION

OCTOBER.—The regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at the Los Angeles Museum at 8 P. M., October 27, 1921. President Dickey was in the chair, with others present as follows: Messrs. Appleton, Barnes, Brown, Chambers, Hanaford, Howell, Lamb, Little, Miller, Pierce, Rich, van Rossem, Taylor, Warmer, Wyman; Mesdames Hall, Schneider and Warner, and Misses Beers, Burnell, Germain and Kennedy. Mrs. Beers, Mrs. van Rossem and Miss Martin were visitors.

Minutes of September meeting were read and approved. The following new names were presented: Benjamin W. King, Coeur d'Alene, Idaho, by H. J. Rust; Mabel M. Lawrence, Los Angeles, by Wright M. Pierce; Harry Rae Van Cleve, Los Angeles, by Dr. Warmer; James Norris Proctor, Santa Paula, by J. O. Snyder; Mrs. Aurelia B. Ferguson, Los Angeles, by Mrs. Bicknell. The Northern Division sent the name of Mrs. Sara S. Boyle, Berkeley.

Business Manager Chambers announced

the appointment of the secretary as deputy-custodian of the Chambliss Library, property of the Southern Division, and located in the Los Angeles Museum.

The occurrence of the red phalarope, in remarkable numbers, even in our city parks, was commented upon at length. Attention was then centered upon a tray of woodpecker skins, following a brief introductory talk by the secretary. Adjourned.—L. E. WYMAN, *Secretary*.

NOVEMBER.—The regular monthly meeting of the Cooper Ornithological Club, Southern Division, was held at the Los Angeles Museum at 8 P. M., November 22, 1921. President Dickey held the chair, with twenty-five members present, as follows: Messrs. Appleton, Chambers, Hanaford, Howard, Howell, Lamb, Low, Miller, Morcom, Pierce, Reis, Rich, Robertson, Ross, van Rossem, Warmer and Wyman; Mesdames Brown, Law and Warmer, and Misses Burnell, Kennedy, Potter and Pratt. Among the visitors were Mrs. Howell, Mrs. van Rossem and Miss Wetherell.

Reading and approval of minutes of the October meeting preceded presentation of the following new names: Miss Mabel A. Stanford, Claremont, by Wright M. Pierce; Willard Fordyce Grinnell, Berkeley, by J. E. Law; Alice M. Huddleston, Berkeley, by Mr. W. L. Chambers; Howard H. Cleaves, by Carroll DeW. Scott; Clinton G. Abbott, and A. W. Anthony, by Mr. Chambers, the three last mentioned of the Natural History Museum, Balboa Park, San Diego. Names from the Northern Division were: Harry P. Stow, Alameda; Frederick C. Torrey, Berkeley; Zola Zinn, Seattle, Wash., and Dr. Robert Dill, Reno, Nevada.

A letter from the secretary of the Pacific Division, American Association for the Advancement of Science, suggesting Salt Lake City as the place for the next annual meeting, was read by the Secretary. On motion of Mr. Robertson the suggestion was approved. Mr. Law presented a resumé of the business managers' report for 1920 and first half of 1921. This showed a very satisfactory state of finances.

Announcement was made by the secretary that Mr. Howell had been appointed assistant business manager, with the title "Endowment Secretary", his special duties being to solicit contributions to the endowment fund and to otherwise promote that branch of the Club's activities.

An interesting paper on the Thick-billed Parrot in Arizona was then presented by

Mr. Law, followed by informal discussion and inspection of a tray of orioles and grackles. Adjourned.—L. E. WYMAN, *Secretary*.

DECEMBER.—The regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at 8 P. M., December 22, 1921, at the Los Angeles Museum, with President Dickey in the chair and other members present as follows: Messrs. Bishop, Howell, Huey, Law, Little, Nokes, Pierce, van Rossem, Wyman; and Mrs. Law. Minutes of the November meeting were read and approved followed by reading of November minutes of the Northern Division.

New names presented were: Dorothy Sanderson, Los Angeles, and Mrs. A. H. Haynes, St. Paul, Minn., by Mr. Dickey; and Mrs. Arthur J. Mix, Los Angeles, by Mrs. Schneider.

Nomination of officers for 1922 was then taken up. For president, Mr. Howell named Dr. G. C. Rich, seconded by Mr. van Rossem, with nominations closed on the motion of Mr. Little, seconded by Mr. Pierce. The nomination of Mr. Pierce for vice-president by Mr. Law was seconded by Mr. Howell, and nominations closed on motion of Dr. Nokes, seconded by Mr. Little. The incumbent secretary was nominated by Mr. Pierce to succeed himself; seconded by Mr. Law; nominations closed on motion of Dr. Nokes, seconded by Mr. Huey.

A well-prepared paper on certain aspects of evolution was then presented by Mr. Howell, followed by general discussion of the subject. The meeting closed with inspection of a series of loons and grèbes. Adjourned.—L. E. WYMAN, *Secretary*.

JANUARY.—The regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at the Los Angeles Museum at 8 P. M., January 26, 1922, with Vice-President Pierce in the chair and others present as follows: Messrs. Appleton, Barnes, Bishop, Bramkamp, Brown, Chambers, Huey, King, Law, Lamb, Little, Miller, Morcom, Nokes, Dr. Rich, Selwyn Rich, Warmer and Wyman; Mesdames Anthony, Hall, Law and Schneider; Miss Burnell and Miss Terry. Among visitors were Mrs. Bishop, Mrs. Raymond, Prof. Monroe, Dr. Hall and Dr. Bramkamp.

Minutes of December meeting were read and approved. New names were presented as follows: Elmer Wachtel, Pasadena, by H. Arden Edwards; Ross McKinnon, Blue Rapids, Kansas, by P. B. Peabody; Ralph B. Williams, San Ysidro Ranch, Santa Barbara,

by W. Lee Chambers; Mrs. May Canfield, San Diego, by Laurence M. Huey; Miss Elizabeth Dewees, Norristown, Pa., by R. J. Middleton; Alex. Strauss, Banning, by Dick Bramkamp; Rev. Francis M. Wilson, Beaumont, by Walter B. Barrows; Thos. L. Green, Hollywood, by J. E. Law; Mrs. E. M. B. Reichberger, American Museum of Natural History, New York, by W. DeW. Miller; F. C. Millard, Alhambra, by F. H. Hands; Clarence L. Whittle, Boston, Mass., by J. Grinnell; James Olin Wanzer, Sacramento, by W. Lee Chambers. Also from the Northern Division: Miss Matilda V. Nienburg, Alameda; Paul Fredericks Bunker, Berkeley; Emily D. Laloge, Alameda; Dr. G. Dallas Hanna, San Francisco; Leonarde Keeler, Berkeley; Miss W. C. Lindemann, Alameda.

In the matter of election of officers, Dr. Warner moved that the secretary be instructed to cast an electing ballot for all nominees; seconded by Mr. Huey, and unanimously carried, whereupon the secretary announced Dr. Rich elected president, W. M. Pierce, vice president, and L. E. Wyman, secretary. President Rich took the chair.

Dr. Bishop then spoke on birds of the Great Salt Lake region, illustrating his talk by specimens taken by him in that locality. Followed the usual round of informal discussion of bird matters, with inspection of Dr. Bishop's specimens. Adjourned.—L. E. WYMAN, *Secretary*.

#### NORTHERN DIVISION

DECEMBER.—The December meeting of the Northern Division of the Cooper Ornithological Club was held at the usual place on December 22, at 8 p. m. President Wright presided, and those in attendance were: Mesdames Allen, Kelly, Reygadas and Thomson; Messrs. Bassett, Bryant, Bunker, Dixon, Evermann, Gignoux, Labarthe, Miller, Storer, Stow, Swarth, Torrey and Wadsworth. Visitors: Mrs. Bunker, Mrs. Evermann, Mrs. Thomson, Mrs. Wadsworth, Mr. Keeler, Mr. Kessel and Professor Kingsley.

The November minutes of the Northern Division were read and approved, and the October and November minutes of the Southern Division were read. The following names were proposed: Leonarde Keeler, Berkeley, by Mr. Curtis Wright; Miss W. C. Lindemann, Alameda, and Miss Matilda V. Nienburg, Alameda, by Mrs. G. E. Kelly. Announcement was made of the appointment of Mr. A. B. Howell as a third business manager, to have charge of the endowment fund. Mr. Swarth gave a resumé of the business

managers' reports for January and July, 1921.

Nominations for officers for the coming year resulted in the presentation of the following names to be voted on at the January meeting: For president, H. S. Swarth; for vice-president, J. S. Cooper; for secretary, Mrs. J. T. Allen. Further nominations were closed by unanimous vote.

Business completed, Dr. H. C. Bryant presented a "Field Key for California Hawks". After discussion the meeting adjourned.—AMELIA S. ALLEN, *Secretary*.

JANUARY.—The regular meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology on January 26, 1922, at 8 p. m. President Wright was in the chair, and about sixty members and friends were present.

After the minutes of the preceding meeting had been read and approved, officers for the ensuing year were elected as follows: President, H. S. Swarth; Vice-President, J. S. Cooper; Secretary, Mrs. J. T. Allen. Mr. Swarth then took the chair and called on Mr. Charles Keeler for the program of the evening—a talk on "The Evolution of the Colors of Birds".

Two new names were proposed for membership by Mr. H. W. Carriger: Mr. John L. Cole, and Mr. Martin C. Paulson, Nevada, Iowa. The following resolution was submitted by Dr. Joseph Grinnell, who moved its adoption. Upon second by Mr. Lastreto it was unanimously adopted by the Club.

Whereas, it is rumored that the Regents of the University of California are seriously considering the use of Strawberry Canyon as a site for the proposed stadium, and

Whereas, Strawberry Canyon comprises a part of the Campus in which animal life native to the region is continuing under as nearly natural conditions as seem possible anywhere in the east-bay region, and

Whereas, Strawberry Canyon is a valuable asset for field instruction in general biology in certain authorized courses of the University of California and also serves in similar manner all local students of birds and of general natural history,

Be it resolved that the Northern Division of the Cooper Ornithological Club protest emphatically against any move contemplated by the Regents of the University of California which would mean the destruction of Strawberry Canyon as regards the values here emphasized.

On motion of Mr. Lastreto, duly seconded, a committee of two was appointed to investigate legislation pending with regard to the sale of foreign bird-feathers. Adjourned.—AMELIA S. ALLEN, *Secretary*.







**For Sale, Exchange and Want Column.**—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of 15 cents per line. For this department, address W. LEE CHAMBERS, Altadena, Los Los Angeles County, California.

**WANTED.**—North American Fauna, nos. 23, 25, 27, 28, 29; Ridgway's Birds North and Middle America, vols. 2, 3 (paper); Auk; Proceedings of Biological Society of Washington. Send me your lists.—LAURENCE M. HUEY, *Natural History Museum, Balboa Park, San Diego, Calif.*

**WANTED.**—Bent's Life Histories of North American Diving Birds, Bulletin 107 United States National Museum. Can exchange Ridgway's Birds of North and Middle America, vols. 6 or 7.—H. L. STODDARD, *Public Museum, Milwaukee, Wis.*

**FOR EXCHANGE.**—Sets of nos. 277, 364, to be personally collected during season of 1922. HENRY W. DAVIS, *10 So. Baton Rouge Ave., Ventnor, Atlantic City, N. J.*

**FOR SALE.**—Auk, vol. 22, \$3.00. Condor, vols. 7-15, \$2.00 each. Wilson Bulletin, vols. 9-20 (1902-1913), 22 (1915), 24-26 (1917-19), \$1.00 each; 21 (1914) and 23 (1916) 3 nos., 27 (1920), 2 nos., each no. 75 cents; also odd numbers from vols. 4-6. Oologist, vols. 11-12 (lack one number), \$1.00. Would prefer to sell each lot as a whole.—W. E. CLYDE TODD, *Carnegie Museum, Pittsburgh, Pa.*

**WANTED FOR CASH:** Bird-Lore, vol. 1, nos. 2, 3, and 5; vol. 2, nos. 1, 2, 3, and 5; Bent's Life Histories of North American Diving Birds; vol. 6 of the Ornithologist and Oologist; Ridgway's Birds of Illinois, part 2; and Meilwraith's Birds of Ontario, 2nd edition.—B. F. BOLT, *1421 Prospect Ave., Kansas City, Mo.*

To anyone interested in skins from Costa Rica I wish to announce that I shall be able to collect in 1922 many of the birds occurring there, at a very reasonable price if pairs or more of each form be taken.—AUSTIN SMITH, *Apartado 412, San Jose, Costa Rica.*

**FOR SALE OR EXCHANGE.**—A few duplicate lantern slides of birds, nests and eggs. Want slides showing migration, etc. Send for list.—J. L. SLOANAKER, *W. 907 Mansfield Ave., Spokane, Wash.*

**WANTED.**—To purchase for cash any of the following ornithological magazines: Bulletin N. O. C., vol. 1, no. 4. Auk, vols. 2, 6. The Oologist (Utica, N. Y.), vols. 1, 2. Ornithologist and Oologist, vol. 6. O. and O. Semi-Annual, vol. 1, no. 1. The Curlew, vol. 1, nos. 1, 2, 3. Hawkeye O. and O., vol. 1, nos. 2, 4, 6, 7, 8, 9; vol. 2, nos. 2, 4. The Loon, vol. 1, nos. 1, 2, 6. Oologist's Exchange, vol. 2, no. 4. The Hummer, vol. 1, nos. 1, 2, 3, 4. American Osprey, vol. 1, nos. 1, 4, 5, 7, 8, 9. Stormy Petrel, vol. 1, no. 1. Oologist's Journal, vol. 1, nos. 2, 3, 4, 10, 11. Hoosier Naturalist, complete. Agassiz Ass'n. Bulletin, vol. 1, nos. 3, 6. Am. Mag. Nat. Science, vol. 1, no. 6. Collector's Monthly, vol. 3, no. 5. Ornithologist and Botanist, vol. 2, nos. 3, 4, 5. Natural History Collector's Monthly, vol. 1, no. 3. Will purchase complete volumes in order to get numbers needed, if necessary.—DR. W. L. MITCHELL, *Paonia, Colorado.*

**FOR EXCHANGE.**—Well made skins of small mammals for skins from elsewhere, of other small mammals. Also offer scientific specimens of shells for other shells.—RALPH W. JACKSON, *Route no. 1, Cambridge, Maryland.*

**FOR SALE OR EXCHANGE.**—Ridgway's Birds of N. and Mid. Am., pts. 5 and 6, paper. Wanted, Bendire's Life Histories; Nelson's Rabbits of N. Am.—F. N. BASSETT, *1333 Eighth St., Alameda, Calif.*

**WANTED.**—First class skins with full data of the Anatidae, Columbidae, Gallinae, Limicolae, Rallidae. Foreign species especially desired. Send list with prices.—H. B. CONOVER, *6 Scott Street, Chicago, Illinois.*

## MEETINGS OF THE COOPER ORNITHOLOGICAL CLUB

**Northern Division:** 8 P. M., fourth Thursday of month, at Museum of Vertebrate Zoology, University of California, Berkeley. Take any train or car to University Campus. The Museum is the corrugated iron building on south side of campus just north of football bleachers.—MRS. AMELIA S. ALLEN, *Sec'y, 37 Mosswood Road, Berkeley, Calif.*

**Southern Division:** 8 P. M., last Thursday of month, at Museum of History, Science, and Art, Exposition Park, Los Angeles. Take car marked "University", west-bound on 5th Street (in down-town district); get off at 39th Street and Vermont Avenue. One long block east to Park. The Museum is the building with the large dome.—L. E. WYMAN, *Sec'y, care of Museum.*

**Intermountain Chapter:** Get date and place from the Sec'y, ASHBY D. BOYLE, *351 5th Ave., Salt Lake City, Utah.*

**San Bernardino Chapter:** Get date and place from the Sec'y, M. FRENCH GILMAN, *Banning, Calif.*



